

163

# REVIEW OF THE AVAILABILITY AND QUALITY OF GLOBAL DEMOGRAPHIC DATA

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Y 4. P 84/10:103-52

Review of the Availability and Qual...

## HEARING

BEFORE THE

SUBCOMMITTEE ON CENSUS, STATISTICS AND  
POSTAL PERSONNEL

OF THE

COMMITTEE ON  
POST OFFICE AND CIVIL SERVICE

HOUSE OF REPRESENTATIVES

ONE HUNDRED THIRD CONGRESS

SECOND SESSION

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AUGUST 2, 1994

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**Serial No. 103-52**

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Printed for the use of the Committee on Post Office and Civil Service



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# REVIEW OF THE AVAILABILITY AND QUALITY OF GLOBAL DEMOGRAPHIC DATA

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TUESDAY, AUGUST 2, 1994

HOUSE OF REPRESENTATIVES,  
SUBCOMMITTEE ON CENSUS,  
STATISTICS AND POSTAL PERSONNEL,  
COMMITTEE ON POST OFFICE AND CIVIL SERVICE,  
*Washington, DC.*

The subcommittee met, pursuant to call, at 10:04 a.m., in room 311, Cannon House Office Building, Hon. Thomas C. Sawyer (chairman of the subcommittee) presiding.

Members present: Representatives Sawyer and Petri.

Member also present: Representative Morella.

Mr. SAWYER. Thank you all for being here. The U.N. International Conference on Population and Development next month in Cairo is going to deal with population issues that affect us all in ways that are far broader than the notion of population usually generates among most people, I suspect most places in the world. And yet its effect is very deep and broad.

The United States for the first time in some time is in a strong position to provide effective leadership in a wide variety of global population policies. Our commitment will have, I hope, an enormous effect on the outcome of the conference.

Population is growing and moving in ways that demand coordinated responses by the international community. We need timely, reliable, and consistent information to understand this kind of rapid change and its consequences. Not only that, but we need that kind of information to support the core issues that underlie the consequences of that change.

Often, at least some arenas of global population data are sketchy and of inconsistent quality. Strengthening that data will help us to guide policy decisions. Perhaps just as much, it will help us to measure our own efforts to participate and lead in the world. That ability to measure those consequences is perhaps one of the most difficult things in dealing with questions of foreign aid of any that we face.

Let me just mention a few of the issues that are of particular interest to me this morning: We have perhaps the largest number of forced international migrants in the world today of any time since World War II. Despite their relatively small proportion of total world population, their substantially growing numbers have an increasingly significant effect on a broad range of policy consideration. However, information about the number and movement of refugees is inadequate. Similarly, insufficient data affect our ability

to address other global population issues, including growth, the availability of reproductive health information, and questions of sustainable development. It is not good enough to argue whether individual global demographic trends are desirable. The reality is that those changes are happening and we need to come to grips with their consequences.

I think, perhaps as important as anything, rapid demographic change drives and is driven by economic and technological change. These combined forces are exploding in ways that we are only really beginning to comprehend. That kind of sea change influences the relationship among nations and in preparing for Cairo, I think, it is important to understand what is happening not only among nations, but among regions in relation to one another.

Last month, I took part in the Foreign Affairs Committee's oversight hearing on the Cairo Conference. I hope that this hearing will complement the work that Chairman Hamilton has done, and the broader work of the congressional delegation to that conference.

Before we begin, I want to thank the Population Resource Center for its assistance in preparing for this hearing, as well as Jennifer Williams of the Congressional Research Service. I look forward to our witnesses today.

[The prepared statement of Hon. Thomas C. Sawyer follows:]

PREPARED STATEMENT OF HON. THOMAS C. SAWYER, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF OHIO

I am pleased to welcome our witnesses and guests to this morning's hearing.

Next month's United Nations International Conference on Population and Development in Cairo is a significant opportunity for the world's citizens and nations to collaborate on population concerns that affect us all. For the first time in over a decade, the United States is well-positioned to provide substantive, effective leadership that will shape global population policies into the next century. Our level of commitment toward achieving definable goals will have an enormous effect on the outcome of the Cairo Conference.

The global population is growing and changing at a rate that demands coordinated responses by the international community. We need reliable, timely, and consistent information not only to understand the rapid pace of population change and its consequences, but to support meaningful discussion of the core issues at the Cairo Conference and beyond.

Global population data are often sketchy and of inconsistent quality. Strengthening the global data infrastructure will help guide policy decisions. It will help us to gauge the need for, and measure the success of, foreign assistance programs. Enhanced population information will also help policymakers in other nations to identify priorities and respond to their own needs.

The Cairo Conference will raise many significant issues. I want to mention a few of particular interest to me.

There are more than 19 million refugees in the world today—the largest number of forced international migrants since World War II. While refugees comprise a relatively small portion of the global population, their large numbers are necessarily an increasingly significant factor in a broad range of policy considerations, including housing, workforce, and education issues.

Statistical information on the number and movement of refugees, as well as their needs, is inadequate, particularly when refugee flows are substantial. Similarly, insufficient data affect our ability to address other global population issues, including population growth, availability of reproductive health information and services, and sustainable development. It is not good enough to argue whether individual global demographic trends are desirable. The reality is that population changes are happening, and we need to address their consequences.

Rapid and profound demographic change drives, and is driven by, economic and technological development. The consequences of those combined forces are exploding in some parts of the world in ways that we are only beginning to comprehend. This sea change influences the relationship between nations. In preparing for the Cairo

Conference, it is enormously important to understand and maintain a focus on what is happening to regions and nations, both individually and in relation to each other.

Last month, I was pleased to participate in the Foreign Affairs Committee's oversight hearing on U.S. policies and preparations for the Cairo Conference. I hope that this hearing will complement Chairman Hamilton's effort, as well as that of the U.S. delegation to Cairo, in preparation for the Conference.

Before we begin, I want to thank the Population Resource Center for its assistance in preparing for this hearing, as well as Jennifer Williams of the Congressional Research Service for her continued guidance and support to the subcommittee.

I look forward to hearing the testimony of our witnesses.

Mr. SAWYER. It is a pleasure to welcome the gentlelady from Maryland, Mrs. Morella. Connie, do you have anything as you get settled there that you would like to offer by way of opening comment?

Mrs. MORELLA. I don't at this time, Mr. Chairman, but as a cochair and a member of the congressional delegation to Cairo I want to thank you for inviting me to what I consider to be a very important meeting of the subcommittee and I know that you invited me because you know of my interest and cochairmanship of the Congressional Coalition on Population and Development, and the fact that I, like you, will be going to Cairo for the conference. So we look forward to receiving much useful information from the Census Bureau in our preparation for Cairo. Thank you again, Mr. Chairman.

Mr. SAWYER. Thank you very much for being here.

Our first panel this morning is made up of Dr. Scott R. Radloff, who is the Chief of the Policy and Evaluation Division, USAID; Dr. Judith Banister, Chief of the Center for International Research at the U.S. Bureau of the Census; and Dr. John Haaga, Director of the Committee on Population, National Academy of Sciences.

Let me just, by way of summary, mention that you should feel free to summarize your testimony in ways that best serve your purpose in emphasizing the importance of what you have to say, with recognition that the full text of your written testimony will, without objection, be made a part of the record. Dr. Radloff.

**STATEMENTS OF SCOTT R. RADLOFF, CHIEF, POLICY AND EVALUATION DIVISION, U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT; JUDITH BANISTER, CHIEF, CENTER FOR INTERNATIONAL RESEARCH, U.S. BUREAU OF THE CENSUS, ACCCOMPANIED BY PETER WAY AND KAREN STANECKI; JOHN G. HAAGA, DIRECTOR, COMMITTEE ON POPULATION, NATIONAL ACADEMY OF SCIENCES**

Mr. RADLOFF. Thank you. My name is Scott Radloff. I am the Chief of the Policy and Evaluation Division within the Office of Population at USAID.

I am very pleased to have the opportunity to testify this morning to this subcommittee. I have worked for nearly 12 years in the Policy and Evaluation Division. This division houses our central programs that support data collection and its analysis for policy and evaluation purposes. We work extremely closely with the central Office of Health in supporting many of these efforts.

USAID has supported the collection and analysis of demographic and health information for nearly 30 years. We do this primarily through support for censuses and surveys and through agreements with the U.S. Bureau of the Census and with Macro International.

Direct support for surveys is also provided through an agreement with the Centers for Disease Control. A much wider array of programs provides support for analyzing and utilizing these data for policy, planning, and evaluation purposes.

USAID expended over \$7 million through these census and survey programs in fiscal year 1993. Roughly three-quarters of these expenditures were for survey activities. Beginning with the World Fertility Survey in 1972, USAID has relied heavily on surveys for providing information on knowledge, attitudes, and practices related to family planning.

Over time, the scope of these surveys has expanded to include more information on health needs, knowledge and behavior, particularly with respect to child and maternal health. The scope of these surveys has also expanded to include more information on quality and accessibility of services. Demand for surveys from USAID field missions has escalated in recent years in response to the Agency's heightened attention to evaluating program performance and impact. USAID plans to obligate over \$13 million to DHS, to the DHS project this fiscal year.

The collection and analysis of demographic and health data are an essential part of our assistance program. These data support our work in four ways: First, they allow us to identify needs in population health and nutrition, both in terms of severity and magnitude. Second, they inform policymakers of the pressing issues in this sector and help guide decisions for allocating public sector resources and for stimulating private sector provision of services. Third, they provide a basis for planning programs that extend services where the needs are greatest. And fourth, they enable monitoring of progress over time in addressing needs and evaluating the impact of our assistance.

Much of USAID's assistance is provided in the form of training, technical assistance, and technology development and transfer. In the case of surveys, we also provide support for local costs of the surveys.

The upcoming International Conference on Population and Development in Cairo will bring renewed attention to the population issues. Unlike past international conferences, the Cairo Conference is likely to see a strong consensus between developed and developing countries on most issues. The consensus will expand the focus of population activities to include reproductive health as well as family planning. More emphasis will be placed on meeting individual needs, leading to more client-oriented services. It will also advocate greater attention to related interventions that improve women's status and reduce child mortality.

Both USAID and the Department of State have been very involved in preparations for Cairo, and have given a great deal of attention to developing this consensus. These new emphases are embraced by USAID and we are already—already are beginning to incorporate them within our programs. We are working to expand access to services, but at the same time we are striving to improve the quality of services, through providing a wider selection of methods, improving provider training, and assuring adequate counseling and followup. We are looking to expand services to include related reproductive health interventions, including STD prevention, post-

abortion contraception, and programs that address the special needs of adolescents.

As we develop programs in these areas, we will need to expand our data collection efforts to include information relating to quality of care and reproductive health. This task is already being taken up under the DHS project. Many of the topics receiving attention at the Cairo Conference have been included in past rounds of these surveys. All of these surveys gather information on birth of children, preferences for future childbearing, use of family planning services, the health and nutrition of the youngest children, preferences for—I am sorry, including information on breast-feeding practices, marriage patterns, and socioeconomic data for women and their spouses. Many of the surveys collect information about providers of family planning services that enable the effectiveness and quality of services to be evaluated.

We have recently begun a new third round of DHS surveys. DHS-III will begin to collect more extensive information on reproductive health. In the past, the data on reproductive health have either been inadequate or virtually nonexistent. Information on maternal health, HIV/AIDS, and abortion-related knowledge and experience is included in all the surveys in this round. A select set of surveys will gather additional information on one or more of the following topics: maternal mortality, STD's, female genital mutilation, and domestic violence.

Through agreements with our Office of Health in Africa Bureau, the U.S. Bureau of Census is maintaining an international database on HIV/AIDS. It is analyzing and assessing these data to produce realistic estimates of prevalence of HIV/AIDS. It is also producing special thematic reports based on these data, and developing simulation and projection models of the future course of the HIV/AIDS epidemic and potential impacts of alternative interventions.

To better understand and monitor STDs, the Census Bureau is in the process of developing a STD database, compatible with the HIV/AIDS surveillance database. The expansion of our data collection efforts will allow USAID to do a better job of designing and implementing new programs related to reproductive health.

Data collection and analysis has been key to our past success in the population and health sector, enabling us to develop policies that improve access to services, to design service delivery systems that effectively respond to needs, and to monitor and evaluate our programs. The continued support of these data collection activities will help ensure the continued success of population programs and the development of new successful programs in reproductive health. That concludes my opening remarks. Thank you.

Mr. SAWYER. Thank you very much.

[The prepared statement of Mr. Radloff follows:]

PREPARED STATEMENT OF SCOTT R. RADLOFF, CHIEF, POLICY AND EVALUATION DIVISION, U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT

Thank you, Mr. Chairman, for the opportunity to appear before you today to review the availability and quality of global demographic data to support policy development, program planning and evaluation. These issues are receiving particular attention today as we approach the United National International Conference on Population and Development.

The U.S. Agency for International Development (USAID) has supported the collection and analysis of demographic and health information for nearly 30 years. We do this primarily through support for censuses and surveys. These two data collection systems are highly complementary. Our survey programs generally rely on census data as the basis to draw samples to represent what is happening in a country. While surveys provide a means to look at what is happening in great detail at a national or regional level, censuses provide the means to look at a more limited set of topics within much smaller areas, such as districts and communities.

USAID supports these data collection efforts principally through agreements with the U.S. Bureau of Census and with MACRO International. These two organizations are also testifying today. Direct support for surveys is also provided through an agreement with the Centers for Disease Control. A much wider array of programs provides support for analyzing and utilizing these data for policy, planning and evaluation purposes.

USAID spent approximately \$7.2 million through these census and survey programs in fiscal year 1993. Roughly three-quarters of these expenditures were for survey activities. Beginning with the World Fertility Survey (WFS) in 1972, USAID has relied heavily on surveys for providing information on knowledge, attitudes, and practices relating to family planning. Indeed, through the WFS and the successor survey programs, the Contraceptive Prevalence Surveys and the Demographic and Health Surveys (DHS), USAID has pioneered the collection and use of population-based surveys for assessing needs and guiding programs.

Over time, the scope of these surveys has expanded to include more information on health needs, knowledge and behavior, particularly with respect to child and maternal health. The scope of these surveys has also expanded to include more information on the quality and accessibility of services. Demand for surveys from USAID field missions has escalated in recent years in response to the Agency's heightened attention to evaluating program performance and impact. We have requests for surveys from 42 of our field missions under the current 5-year DHS-III project, which compares with 29 and 22 surveys sponsored under the earlier DHS projects. USAID plans to obligate over \$13 million to the DHS project this fiscal year.

#### ROLE OF DATA COLLECTION AND ANALYSIS

The collection and analysis of data are an essential part of our assistance program in the Population, Health and Nutrition sector. These data support our work in four ways: They allow us to identify needs in population, health and nutrition, both in terms of severity and magnitude; they inform policy makers of the pressing issues in the sector and help guide decisions for allocating public sector resources and for stimulating private sector provision of services; they provide a basis for planning assistance efforts in ways that extend services to where the needs are greatest; and they enable monitoring of progress over time in addressing needs and evaluating the impact of assistance efforts.

Accurate and timely data are useful at various levels. They are used by host country governments and non-government organizations in assessing needs, setting policies, planning programs and monitoring progress. They are used by our field missions in developing assistance strategies for helping countries address needs in the population and health sector. And they are used by our central programs to help prioritize needs and assess progress across countries. We are currently developing strategic guidelines to provide a unified set of priority countries for the Population, Health and Nutrition sector, drawing upon current population and health data. These data are also used within our PRISM system for tracking program performance and impact across all countries.

While we rely heavily on these data within the population and health sector, basic demographic and socioeconomic data have much broader uses. They are essential for any population-based service program, such as health, education, and urban services. But, I'd also like to point out that demographic data, especially data disaggregate by age, sex, residence, and labor force status, are needed for designing and evaluating programs in every area of sustainable development—including economic growth, the environment, and democracy and governance—because in the end we are concerned about the impact of our programs on individual people and their lives.

#### ASSISTANCE NEEDS

Much of USAID's assistance is provided in the form of training, technical assistance, and technology development and transfer. In the case of surveys, we also provide support for local costs.

The long-term training that we and other donors have funded over the years has created a nucleus of very capable demographers and statisticians in most of the developing countries of the world. The continuity provided by this cadre of trained technicians is important to the success of these programs. It is our own long-term interest to continue to provide support for demographic and statistical training to assure that a critical mass of trained technical remain in the countries in which we work.

Much of our support is in the form of technical assistance. Such assistance is provided at every step of the census and survey process: planning, questionnaire design, interviewer deployment and supervision, data collection, entry and processing, and analysis and dissemination of the results. Some countries need help at every stage of the process; others have more limited needs. Each is treated individually, and in each case our goal is to transfer skills and knowledge to developing country personnel who can then carry out the work themselves.

One of the greatest contributions we have made to data collection is our support for the development of microcomputer-based software specially designed for developing country censuses and surveys. This has enabled countries to switch from mainframe computers to microcomputers for their census and survey operations. In 1980 most data were entered and processed on mainframe computers. Today, all surveys and most censuses use microcomputers, greatly reducing costs and speeding up the processing and eventually availability of the data.

Judging by the requests that we receive for assistance, we can be most helpful to other nations in building sound statistical systems by controlling to provide technical assistance, training, hardware and software specially designed for censuses and surveys. For censuses, we generally do not fund local costs, the costs of actually fielding enumerators to collect the data, and we tend not to support long-term training or long-term resident advisers. However, USAID is only one of the number of donors supporting census data collection. The United Nations Population Fund (UNDP) is the leading donor of census support, providing between \$15 and \$18 million annually during peak census years and is more likely to support direct census costs, long-term advisers, and long-term training, depending on country needs and experience. Additional census support comes from the United Nations Development Programmed, the World Bank and to a more limited extent, other bilateral donors.

Because of the multiple number of donors involved in census support, we have tried to coordinate our assistance. In many countries, this occurs through our field missions and other donor representatives. Given the special needs in Africa, where experience in census-taking is much shorter and support needs are greater, we have a standing Census Coordinating Committee for Sub-Saharan Africa. This Committee meets on a semi-annual basis and provides an opportunity for donors to review individual country needs and coordinate response to those needs. As a consequence of this coordination, USAID and UNFPA recently sponsored a joint needs assessment for Mozambique. By jointing forces, we were able to field a team with a wider range of skills than either of us could have afforded alone, and were able to assess the technical and resource requirements for all phases of the census. The team produced a joint project proposal that will be presented to a variety of donors to coordinate their support for different census activities.

USAID is today the predominant donor for demographic and health survey research, although other donor provided support to the early survey work of the WFS project. In recent years, the DHS project has been able to secure funding primarily to support local costs from various sources including UNFPA, UNICEF, the World Bank, NGOs, PVOs, and sources of funding from within the countries where the surveys are being done. The availability of funding from other donors has increased the number of surveys that have been undertaken. In some cases, the funding of other donors has been used to expand the scope of surveys through the inclusion of questions not found in the standard surveys.

#### EMERGING DATA COLLECTION AND ANALYSIS NEEDS

The upcoming International Conference on Population and Development (ICPD) in Cairo will bring renewed attention to population issues. Unlike past international conferences, the Cairo Conference is likely to see a strong consensus between developed and developing countries on most issues. The consensus will likely expand the focus of population efforts to include reproductive health as well as family planning. More emphasis will be placed on meeting individual needs, leading to more client-oriented services. It will also advocate greater attention to related interventions that improve women's status and reduce child mortality.

Both USAID and the Department of State have been very involved in preparation for Cairo and have given a great deal of attention to developing this consensus. These new emphasis are embraced by USAID and we are already beginning to incorporate them within our programs. We are working to expand access to services, but at the same time are striving to improve the quality of services—by providing a wider selection of methods, improving provider-training, and assuring adequate counseling and follow-up. We are looking to expand services to include related reproductive health interventions, including STD prevention, post-abortion contraception, and programs that address the special needs of adolescents.

As we develop programs in these areas, we will need to expand our data collection efforts to include information relating to quality of care and reproductive health. This task is already being taken up under the DHS project. Many of the topics of particular interest for the ICPD have been included in past rounds of these surveys. All of the surveys gather information on the birth of children; preferences for future childbearing; use of family planning services; the health and nutrition of the youngest children, including information on breastfeeding practices; marriage; and socio-economic data for women and their spouses. Many of the surveys collect information about providers of family planning services, which will enable the effectiveness of those services to be evaluated.

We have recently begun a new third round of the DHS surveys. DHS-III will begin to collect information on reproductive health. In the past the data on reproductive health has been either inadequate or virtually non-existent. Information on material health, HIV/AIDS and abortion related knowledge and experience is included in all the surveys in this round. A select set of surveys will gather additional information on one or more of the following topics: material mortality, sexually-transmitted diseases (STDs), female genital mutilation, and domestic violence.

Although the DHS provides extension information, more still needs to be done. Work is being done to develop new indicators that measure reproductive health and quality of care. Data necessary for some of these indicators may be collected through our existing survey programs, including the DHS, or through other programs. A new methodology called Situation Analysis has been used to closely examine the quality of services through multiple means, both qualitative and quantitative. This method attempts to measure various dimensions of service accessibility and quality. Measures range from assessing the state of the equipment and supplies in a facility, observing interactions between providers and clients, assessing the competence of the providers, to asking the clients themselves about their satisfaction with the services. Information on HIV/AIDS and STD incidence and prevalence are being collected in many countries using a variety of instruments.

Through agreements with our Office of Health and Africa Bureau, the U.S. Bureau of Census is maintaining an international databases on HIV/AIDS, is analyzing and assessing these data to produce realistic estimates of prevalence, producing special thematic reports based on these data (for example impact of HIV/AIDS epidemic on the global spread of tuberculosis and the impact of the epidemic on girls and women, and the impact of migration on spread of HIV/AIDS in southern Africa), and developing simulation and projection models of the future course of the HIV/AIDS epidemic and potential impacts of alternative interventions.

The expansion of our data collection efforts will allow USAID to do a better job of designing and implementing the new programs related to reproductive health. Data collection in general has been key to our past success in USAID's population and health sector, enabling us to better form policies that direct programs, plan for the implementation of those programs and, monitor and evaluate programs. The continued support of these data collection activities will help to ensure the continued success of population programs and the development of new successful programs in reproductive health.

**Mr. SAWYER. Dr. Banister.**

**Ms. BANISTER.** Mr. Chairman, thank you for the opportunity to testify today on the global demographic data needed for the Cairo Conference in September 1994. In recent decades, there has been strong improvement in the quality and coverage of population and related statistics in most of the world's countries. For this global statistical progress, we want to give due credit to the fine work of international organizations such as the United Nations and many other kinds of organizations around the world such as foreign government agencies, Macro International, foundations, and universities.

At the same time, we in the U.S. Government should not be too modest in noting the enormous contributions we have made to the considerable advancements in population statistics around the world. Many parts of the Agency for International Development, especially but not exclusively AID's Office of Population, have supported, funded, and guided the gathering and analysis of much needed statistics in developing countries.

In today's discussions, we have been asked to focus on the quality and usefulness of global demographic data, but we should not neglect other kinds of statistics. An impressive aspect of the plans for the Cairo meetings is that the world is looking beyond population change to consider the impact of population on sustainable development in each country and region as well as worldwide. Leaders around the world have developed broad agreement that population and development are intertwined, and that reducing the population's fertility level alone or achieving rapid increases in industrial production alone will not solve all the problems of development. To assess the relationships between population and development, the world needs not only the best possible demographic statistics, but also high quality data on national economies, agriculture, environmental changes, education, and social indicators.

We at the Bureau of the Census are proud of the sustained contributions we have made to statistical progress in the world's developing countries. The Bureau of the Census has been active in international statistical activities for over 50 years, but especially since the end of World War II when the Federal Government identified a need to understand foreign population trends and to ensure that countries were capable of collecting relevant population statistics. Because of the Census Bureau's expertise, other Federal agencies turned to us to provide the research, training, and technical assistance to meet some of these needs. These relationships continue today.

To what extent have developing nations sought our assistance in strengthening their data collection systems and what kinds of assistance are they requesting now? The Bureau of the Census has trained 12,000 statistical personnel from developing and transitional countries in applied statistical and demographic techniques. Today, the majority of developing country statistical bureaus include graduates of our workshops and classes. These leaders are engaged in the continual upgrading of their own national statistical systems.

In addition, the Census Bureau has provided statistical assistance to over 100 of the world's more than 200 countries. We have sent technical assistance teams to many dozens of developing countries to advise them on their population censuses. We work with our developing country colleagues to strengthen the design, planning, and implementation of the census, followed by the data processing, analysis, and dissemination of census results. We have supported countries in carrying out a wide variety of household surveys and economic and agricultural censuses. Our Integrated Microcomputer Processing System [IMPS] is the most widely used system in the developing world for census and survey data processing. We have also assisted countries in developing information sys-

tems on such diverse topics as health, foreign investment, and women in development.

The Census Bureau continues to receive far more requests for statistical assistance from developing and transitional countries than we can possibly meet. The constraint is usually financial. One way we are trying to enhance the cost-effectiveness of U.S. Government technical assistance is to work jointly with other agencies and donors, such as the United Nations. Recent successful examples of such coordinated assistance are our technical support for a rural household survey in Bolivia, the census of Honduras, and our joint project development mission for the Mozambique census.

We also operate an intensive program of research on international demographic, social, and economic trends. One of the guiding principles behind our research program is the production of reliable and consistent data series. A separate submission to you is the latest edition of our "World Population Profile" book, which presents a consistent set of population and demographic indicators for all countries of the world. We created and maintain an international database of population and related data and estimates for every country. As new data come in from censuses and surveys and other sources, we evaluate and adjust the data as necessary and then update the international database to make our information as reliable and timely and consistent as possible. In our research, we emphasize that statistics should be compiled separately by gender, so we can assess the changing conditions of women and girls in the world, a topic of major importance at the Cairo Conference and beyond.

We are also submitting copies of our set of eight World Demographic Maps that we created for distribution at the Cairo Conference, under funding from AID. The Census Bureau is engaged in mapping the world's population at national and especially subnational levels in every country. Our population maps are to be disseminated worldwide for use in the study of global population and environmental changes.

Are the existing global population statistics and other development statistics adequate for policy formulation at Cairo and beyond? Broadly, yes, they are. Several decades of hard work have yielded good enough information to inform our policy decisions today, such as the available data on population growth, birth rates, and some other measures of economic and social conditions.

But is this enough? Can we now pack up our tents and go home, confident that we have all the statistics we need for international population and development policy-making, and that all developing countries can now carry on alone? The answer is no.

Most of the world's developing and transitional countries continue to need help in order to improve the quality and timeliness of their statistics. Continuing to monitor future changes in population size and growth and age structure and fertility requires future censuses and targeted surveys that use the censuses for the sampling frame. In addition, virtually all developing countries need to make substantial improvements in the analysis, dissemination, and use of statistical information.

Certain types of population data remain particularly problematic and weak from a global perspective. In some countries, the last

census was held over a decade ago, yet rapid changes are taking place. Such nations lack reliable and timely information on important figures such as population size, age and sex structure, and local area information. Newly independent countries in Africa, Eastern Europe, and Asia are particularly in need of usable demographic data.

Migration statistics worldwide are extraordinarily poor. Within-country migration is rarely well documented or counted. Data on international migration are barely adequate, even covering legal immigration into developed countries. Figures are very faulty for most other types of international migration. Illegal international migration is on the increase and very hard to trace. The U.N. High Commissioner for Refugees counts the world's refugees, but is hampered by lack of resources, other urgent priorities, and conflicting definitions as to who qualifies as a refugee. Based on the incomplete figures available, the number of refugees in the world has grown explosively, from only 2.5 million in 1970 to 19 million for yearend 1992.

What can the world do to better measure migration? We could work with the United Nations to develop agreed international statistical standards concerning who is an international migrant and who is defined as a refugee. We could give financial and technical support to efforts to count particular concentrations of refugees and other migrants. We could encourage the inclusion of census and survey questions on place of birth, date of migration, and other migration questions. We could use the collected data on the flows and the stock, that is, the total numbers of international migrants, as a check on one another, and to build a more coherent and accurate set of figures.

The written report we have submitted also discusses other problems with global population statistics, such as the problems with data from the former Soviet Union. We also document the poor quality and coverage of data on the world HIV/AIDS epidemic. The U.S. Census Bureau has compiled and continually updates the world's most complete database on this epidemic in developing countries, and we are creating, as Scott Radloff said, a parallel database on sexually transmitted diseases in these countries. Enhanced reproductive health worldwide is one of the goals of the Cairo Conference, and better data are needed to help policy formulation in this important effort.

To gather comparable demographic and related socioeconomic information from around the world, the United States can continue and expand its program of technology transfer in statistical fields. Through training and technical assistance, we can support the collection, analysis, and dissemination of comparable demographic data. We can take the lead in supporting development of international standards for population data. Finally, we can multiply our effectiveness through closer coordination with other organizations. Thank you.

Mr. SAWYER. Thank you very much, Dr. Banister.  
[The prepared statement of Ms. Banister follows:]

PREPARED STATEMENT OF JUDITH BANISTER, CHIEF, CENTER FOR INTERNATIONAL RESEARCH, U.S. BUREAU OF THE CENSUS

## EXECUTIVE SUMMARY

- Since before World War II, the Bureau of the Census has been a major source of expertise for countries around the world as they have established and upgraded their statistical services. Under the coordination of the Office of Statistical Policy, U.S. Office of Management and Budget and in cooperation with the international training programs of other federal agencies, such as the Bureau of Economic Analysis and Bureau of Labor Statistics, we have developed a comprehensive program of training and technical assistance to meet statistical development needs.
- Since the formal training and technical assistance program of the Census Bureau was established in 1947, over 12,000 specialists from 120 countries have participated in Census Bureau programs. These programs have been funded by the countries themselves, the U.S. Agency for International Development, the World Bank, and other organizations. In all cases, they have turned to the Census Bureau because of our expertise and ability to provide assistance in a wide range of statistical topics and in a variety of ways, from classroom instruction to in-the-field census planning and implementation.
- While the quality and availability of global demographic data have improved significantly over the years, there remain major shortcomings that impede our ability to provide the information required by policy makers. The quality and availability of data vary considerably among countries and regions of the world. Deficiencies range from lack of information (e.g., in countries where there has been no census in many years or where crucial data are not collected) to lack of sufficient detail (by age, sex, or social and economic categories).
- Some special concerns about data include the availability of timely and reliable information on refugees, statistical systems in the countries of the former Soviet Union, and information on HIV seroprevalence and the numbers of AIDS cases.
- The United States, through the Bureau of the Census and other federal statistical agencies, can play a major role in supporting the collection, processing and dissemination of reliable and timely statistics throughout the world. A commitment of financial assistance to cover classroom training here in the United States, as well as training, technical assistance, and cooperative research abroad will help ensure that countries can produce the statistics needed to enhance development.
- The United States has a dual role in supporting and promoting high-quality demographic data around the world. The first of these is in the provision of much-needed technical assistance and resources for supporting the collection, analysis and dissemination of demographic data. The second role for the United States is as a leader in international cooperation.

## INTRODUCTION

In recent decades, there has been strong improvement in the quality and coverage of population and related statistics in most of the world's countries. International organizations, such the United Nations Population Fund, the World Health Organization, and the Population Division and Statistical Division of the United Nations, can take a great deal of credit for the global statistical improvements that have taken place. We in the United States Government, while giving due credit to the fine work of international organizations, should not be too modest in noting the enormous contribution that we have made to the considerable improvements in population statistics around the world. Many parts of the U.S. Agency for International Development (USAID), especially but not exclusively the USAID Office of Population, have supported, funded, and guided the gathering and analysis of much-needed demographic statistics in developing countries.

Our review focuses on the quality, completeness, availability, and usefulness of global demographic data, but we should not neglect other kinds of statistics. An impressive aspect of the International Conference on Population and Development (ICPD), to be held in Cairo in September 1994, is that the world is looking beyond population change, and is considering the impact of the population changes we see on sustainable development in each country and region as well as worldwide. In recent decades, intellectual and opinion leaders around the world have developed broad agreement that population and development are intertwined, and that reducing fertility alone or achieving rapid increases in industrial production alone will not solve all the problems of development. To assess the relationships between population and development, the world needs not only the best possible demographic statistics, but also high quality data on economies, agriculture, environmental changes, education, and other socioeconomic measures beyond population statistics.

We at the Bureau of the Census are proud of the sustained contributions we have made to statistical development in the world's less developed countries. The Bureau of the Census has been active in international statistical activities for almost 50 years. At the end of World War II, the Federal government identified a need to understand foreign population trends and to ensure that countries around the world were capable of collecting the information required for population statistics. Because of the Census Bureau's expertise, other Federal agencies turned to us to provide the research, training and technical assistance to meet these needs. These relationships continue today.

Working under the sponsorship of USAID, other government agencies, and international organizations, the Census Bureau has for decades operated the largest international training program in the Federal government. Since 1947, we have conducted formal training here and abroad, training more than 12,000 foreign statistical personnel in all areas of statistics, data collection, methodology and automation. We provide both short-term and long-term technical assistance to countries in the planning and

implementation of censuses, surveys, and vital registration systems. Increasingly, we also have helped countries address the needs for broader data dissemination and for effective presentation of data to policy makers and planners. We also operate a program to conduct research on international demographic, social and economic trends. One of the guiding principles behind our research program is the production of reliable and consistent data series. A separate submission is the latest edition of our *World Population Profile* which presents a consistent set of population and demographic indicators for all countries of the world.

This biennial world population report and the bulk of our population research, training, and technical assistance activities are sponsored by USAID, in recognition of the importance of the issues raised by Congressman Sawyer in his letter of invitation: "Clearly, we need reliable, timely, and consistent information in order to guide policy discussions, as well as to gauge the need for, and measure the success of, assistance programs."

The State Department and USAID have requested and sponsored our participation in the regional preparatory conferences leading to the Cairo meeting, and we have contributed to the United States submissions for the preparatory meetings held at the United Nations. The Census Bureau's international programs participate in the ICPD Interagency Working Group that has coordinated the Federal government's participation in ICPD.

Because of our background and expertise on the relevant international demographic and statistical issues, we are especially pleased to respond to the questions that Congressman Sawyer raised in his letter. We have been grappling with these questions for many years and look forward to providing our responses and some related additional materials produced by the staff in our international programs area.

In responding to the questions raised by Congressman Sawyer, we address his concern about the availability and quality of demographic data to support the UN ICPD while taking a broader perspective in the specific responses. The responses relate both to the immediate consideration of issues at the Cairo conference and to the demographic world of the 21st century that we will be facing after the conference.

Are the existing global population statistics and other development-related statistics adequate for policy formulation at Cairo and beyond? In broad outline, yes they are. Several decades of hard work have yielded good enough information to inform our policy decisions today. In particular, we now have usable information on population size and growth for most countries, a general idea of mortality levels and whether survival conditions are improving or deteriorating, some idea whether fertility has remained high or is now declining in the majority of developing countries, measures of contraceptive use in many countries, information on urban population concentrations, and some measures of economic, social, and environmental conditions in most countries.

Is this enough? Can we now pack up our tents and go home, confident that we have all the statistics we need for international population and development policy making, and that all countries can now carry on alone and do a good job of producing complete and accurate statistics from now on? The answer is no. Some countries have now achieved the levels of statistical expertise required and are now wealthy or developed enough to take over without assistance. Most of the world's developing and transitional countries, however, continue to need outside help, including our help, to maintain and improve the quality and timeliness of their population and socioeconomic statistics. Continuing to monitor changes in population size, growth, distribution, age structure, fertility, and mortality requires future censuses and targeted surveys that use the censuses for the sampling frame. Most countries still need assistance gathering and assessing statistics on demographic and socioeconomic developments. The needs remain great, and the available resources are never enough to meet the demand. This report highlights some of the types of population and related data that remain particularly problematic and weak from a global perspective.

This report addresses each of the five questions raised by Congressman Sawyer. **Section I** describes the Census Bureau's program of international training and technical assistance that has responded to requests for help from developing countries. **Section II** reviews the most significant remaining deficiencies in international demographic and related statistics. It addresses the problems in the traditional demographic measures used for monitoring and predicting population growth (fertility, mortality) and other more specialized population information (ethnicity, information on women's status, reproductive health). **Section II** also looks at the special problems related to information about refugees, HIV/AIDS, and the new countries in transition (Former Soviet Union and Eastern Europe). **Section III** addresses how the United States can be most helpful to other nations in building sound statistical systems. **Section IV** discusses the problems with measuring international migration. Finally, **Section V** discusses how the United States can best promote the reporting of comparable demographic information around the world.

*I. To what extent have developing nations sought help from the Census Bureau to strengthen their data collection systems?*

The developing country demand for Census Bureau help is best demonstrated by the magnitude, breadth, diversity, and longevity of our assistance programs, particularly in light of the reimbursable nature of their funding.

Responding to the needs of the emerging countries of Latin America, the Bureau of the Census first offered international technical assistance in the 1930's and began its formal training program--in Spanish--in 1947. An expanded program of English-language training rapidly followed. In the intervening years, the Census Bureau has participated in the birth of many third world statistical offices.

Today, in response to requests from developing countries around the World, the Bureau of the Census provides technical assistance, training, methodological materials, and statistical software covering all aspects of censuses, surveys, and information systems: sample design, data collection, data processing, analysis, and dissemination.

In fulfilling our goal to "share our expertise globally," the Census Bureau:

- Offers a wide range of technical assistance to developing countries. **In the area of population and housing censuses alone, the Bureau has provided technical assistance to over 60 countries in the current census round.** Beyond this, the Census Bureau has assisted developing countries in such diverse areas as:
  - poverty measurement (Social Dimensions of Adjustment);
  - demographic surveys;
  - vital registration;
  - health information systems;
  - agricultural censuses and surveys;
  - household income and expenditure surveys;
  - foreign investment information systems;
  - labor force surveys;
  - economic censuses and surveys;
  - foreign trade; and
  - price statistics.
- Provides practical, applied training in statistics and related topics to participants from developing country statistical offices around the World. **Since the inception of the program, over 12,000 participants from 120 countries have been trained,** both at the Bureau's training facility in Washington and overseas. The training programs offered include:

- Sampling and Statistical Methods;
- Economic Statistics;
- Computer Processing and Information Systems;
- Survey and Census Methods;
- Population and Health Management Information Systems;
- Population Data Analysis, Dissemination and Utilization;
- Effective Data Dissemination Methods and Techniques; and
- the Demonstration Survey, a unique practical field exercise where theories learned in the classroom are put into practice.

- Develops and distributes statistical software designed to meet the needs of Third World statistical agencies. Currently, over 95 countries are using the Integrated Microcomputer Processing System (IMPS) in all phases of census processing, as well as for a variety of surveys and other statistical efforts. Similarly, the Bureau's Population Analysis Spreadsheets (PAS) have been distributed to over 65 countries to support demographic analysis.
- Distributes methodological materials specific to the needs of developing countries.
- Hosts 300 foreign visitors annually, many of whom are from the developing world. This program is vital in communicating new statistical priorities and technologies to senior officials, who lack the time for participation in formal training. This program has been instrumental in fostering greater commitment to data dissemination and use.
- Exchanges statistical publications with 170 countries and a number of international organizations.

The Census Bureau's international programs operate almost exclusively on a cost-reimbursable basis. The U.S. Agency for International Development is the primary source of funding, and the United Nations, the World Bank, individual governments, and other U.S. Government agencies also provide support. Every year, the Census Bureau is unable to respond positively to many requests for technical assistance, numerous suggestions for improving our statistical software, and literally hundreds of applications to our training program, due to funding constraints.

*II. For which issues are there significant deficiencies in global data (i.e., refugees, HIV, general information for specific nations or regions)?*

Despite the great improvements that have taken place over the past several decades in the quality and availability of population data, there remain significant shortcomings. The magnitude and type of failing varies considerably among countries, but access to reliable information continues to present an obstacle to effective policy discussions.

In a number of countries, even basic demographic measures are:

- not available;
- of questionable accuracy or validity;
- not timely; and/or
- not disseminated and not used.

To a greater or lesser extent, most developing countries need assistance in resolving one or more of the problems listed above. The recent census exposed Nigeria as a extreme example of how all these problems can culminate in a completely distorted view of the demographic situation in a country.

This section discusses the deficiencies in demographic measures, family and gender issues, refugees, HIV and sexually transmitted diseases, and special issues concerning the former Soviet Union.

**A. Demographic, Family, and Gender Issues**

The platform of the International Conference on Population and Development (ICPD) to be held in Cairo in September 1994, addresses a wide range of issues. Among these, we have chosen those most affected by questions of population data shortcomings:

**Population growth and structure.** Successful development programs almost always depend on the availability of reliable information on population trends, past and future growth of the total population and population distribution (age and sex groups, geographical, urbanization, subnational populations, ethnicity).

**Gender equality.** To assess the comparative situations of males and females in countries or regions, it is necessary to have statistics collected and provided by sex.

**Family, its role and structure.** As societies change, the size, role, and structure of families also tend to change. Identifying the transitions in families is important in assessing and discussing policy alternatives.

**Reproductive rights.** One aspect of reproductive rights is access to family planning. Among the types of information used to evaluate whether there is access to family planning are survey results concerning unmet needs related to family size and spacing and information on contraceptive use.

The problems of data reliability relate primarily to methods used to collect the information that addresses these issues. There are three major categories of sources for these data: censuses, surveys, and administrative statistics. There are some data problems with each of these source categories.

#### Censuses

The major deficiencies found in census data are error in coverage and error in content.

Coverage error occurs because of faulty field operations, poorly trained or careless enumerators, misunderstanding or lack of cooperation by respondents, or simply loss of census forms.

Content error can result from such problems as erroneous or inconsistent reporting of

characteristics by respondents, failure on the part of the enumerator to obtain or record accurately the required information, errors introduced in the processing operation, etc.

Because of errors in coverage, current census results may be inconsistent with previous census data.

Administrative checks and demographic analysis can generally pinpoint the likely sources of error, which may be either in the current or the previous census.

*As in the case of the recent census conducted in The Former Yugoslav Republic of Macedonia, ethnic tensions and political issues may affect the census count. Because the nationality issue is such a potentially explosive topic in Eastern Europe, the government of The Former Yugoslav Republic of Macedonia thought it would try to resolve the dispute over the nationality composition of its country by taking a census. However, because the census was quickly planned, enumerators were poorly trained, and the rules of who could be counted continued to change even after the start of the census, the final count will be questionable. The Albanians were worried that they were not going to be counted because many of them do not have citizenship, even those who have lived in The Former Yugoslav Republic of Macedonia for generations.*

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*In the past decade two of the largest countries in Sub-Saharan Africa (Nigeria and Ethiopia) have conducted censuses that have resulted in population figures significantly different from totals previously projected for these countries. In the case of Nigeria the projected population figure based on a census from the 1960's was 30 million persons larger than the 1991 census population figure. On the other hand, the first census for Ethiopia produced a population figure that was about 10 million persons larger than the projected population that was based on data from surveys held in the 1970's.*

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Error in coverage can also affect information on age groups and the number of males and females. If errors of coverage found in the base population are not corrected they will affect the resulting population projections based on these data.

Error in content may be more difficult to distinguish. However, using inaccurate data due to error in content can result in faulty conclusions. This has often been the case when census data are used in the analysis of participation of females in the labor force.

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*Data on women's participation in the labor force are often under-reported for women. Therefore, it is difficult to use the data on labor force participation for comparison on a global or regional basis.*

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These kinds of errors also affect information collected on demographic variables. The number and timing of births and subsequent infant and child deaths, for example, are best asked of the mother. Yet in most censuses the head of household is asked to provide the information.

There are problems inherent in such data collection efforts; consequently estimates based on data from a census frequently do not fit well with estimates derived from a demographic survey.

Population censuses have several advantages compared to other data collection methods. The census provides the most accurate available estimates of the total size of the population, a sampling frame for surveys, and complete geographic coverage of the country.

#### Surveys

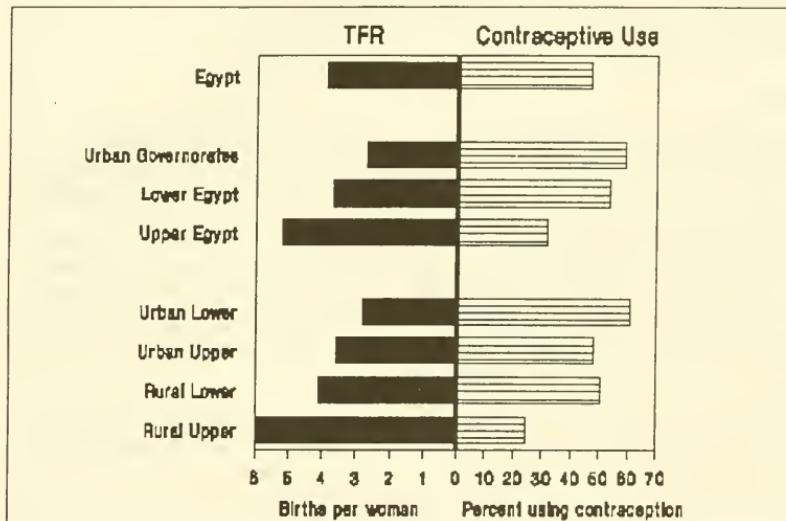
Surveys also have their limitations and liabilities similar to those found in a census. Since the data collected are often more complex, and perhaps sensitive, than the data collected in a census, the quality of the data, in terms of its reliability and accuracy, may be highly dependent on the quality of the field operations, including training and supervision of the interviewers. Because of the sensitivity of some of the questions the respondent may consider them to be personal and may be unwilling to answer them.

However, surveys are often the most reliable source to estimate fertility and mortality when reliable vital registration systems are lacking. Several types of surveys have been conducted in various countries: e.g., National Demographic Surveys, Fertility Surveys, Contraceptive Surveys. In the early 1970's a large amount of the data collected in the developing world has been produced by a series of international demographic data-collection efforts. The first large endeavor was the World Fertility Survey (WFS) project, which collected data on fertility, childhood mortality, and contraceptive use in 41 countries between 1972 and the mid-1980's. The Contraceptive Prevalence Survey project was the next large attempt to

collect similar information as done in the WFS project. These surveys were carried out between 1978 and 1986. Since 1984, another project, Demographic and Health Surveys (DHS) has undertaken to continue to collect needed information for those countries that lack reliable vital registration systems. Individual countries have also conducted their own surveys collecting similar information.

The usefulness of collecting data using a survey can be seen in the chart for Egypt below (source of these data is the DHS). The kinds of information collected in these surveys provide useful data for reproductive health policy makers and planners.

Total Fertility Rate and Contraceptive Use, By Region, for Egypt



#### Administrative Statistics

Countries collect various types of administrative data such as vital statistics. Vital registration systems, if complete and accurate, provide information that can be used to estimate population growth characteristics, e.g., fertility and mortality levels, migration patterns, and small-area population data. The information derived from developing country vital registration systems have long been plagued by chronic underreporting, long processing backlogs, geographic ambiguity, and disuse. In part, little has been done because the improvement of vital registration systems is such a daunting task, but the potential utility of

this information for timely, small area monitoring and evaluation of health and population programs is tremendous.

Other administrative statistics that are used in demography are the data collected on migrants. In most countries these data are not reliable particularly for those persons intent on emigrating. Internal migration statistics are dependable only for a handful of countries. These statistics are usually derived using information from censuses and surveys, or from good population registers.

Administrative statistics from departments of education provide information on the number of students enrolled and graduating as well as number of teachers. Analysis of many of the gender issues depends on administrative statistics: population, by sex, in prisons, the military, mental institutions, etc. The quality and availability of these sorts of administrative statistics vary by country.

#### B. Refugees

There are both short-term and long-term problems in refugee statistics. At the most fundamental level, there is little agreement on the size of longstanding refugee populations. Reliable data on the age-sex structure, fertility, health, and general well being of refugees are only sporadically available, and then seldom used because the findings are so politically charged. The problems are infinitely greater in quickly measuring the numbers of refugees resulting from political disasters such as recently witnessed in Rwanda. Although precise numbers are not needed for action, certainly better information is required than the diverse estimates appearing in the press. Standard data collection strategies will not work in the face of such massive and sudden population movements. Cost effective methods will have to be devised, and a standby capability put in place.

The United Nations High Commissioner for Refugees (UNHCR) estimates that by year-end 1992 there were about 19 million refugees globally. In addition, there were another 2.5 million Palestinian refugees. At the regional level, Asia has the largest number of refugees, followed by Africa.

The first issue is the definition of a refugee. According to the United Nations 1951 Convention Relating to the Status of Refugees and its 1967 Protocol, a refugee is any person who "owing to a well-founded fear of being persecuted for reasons of race, religion, nationality, membership of a particular social group or political opinion, is outside the country of his nationality and is unable or, owing to such fear, is unwilling to avail himself of the protection of that country; or who, not having a nationality and being outside the country of his former habitual residence, is unable or, owing to such fear, is unwilling to return to it."

The above definition is limited to persons fearing a narrow range of human rights violations. However, many countries recognize other involuntary migrants who are not being persecuted

on an individual basis as refugees. Some countries allow the granting of asylum on other "humanitarian grounds."

The UNHCR is the major source of data for international refugees. It publishes estimates of the stocks of refugees that fall within the definition of its mandate. These estimates are based on figures provided by each country hosting refugees. As noted above, each country may have a different definition of who qualifies as a refugee and thus there can be a disparity between countries as to which migrants are recognized as refugees. As such, data on refugees are often considered to be of questionable comparability.

A second problem is that refugee stocks are constantly changing. The UNHCR has reported problems with keeping track of individual refugees within refugee camps due to ongoing turnover. Indeed, a forthcoming United Nations publication notes that "... it is important to keep in mind that refugee data must be interpreted with caution insofar as most countries lack accurate information on the stock of refugees at any given time." This problem is compounded by the fact that some countries are hosting refugees who have been in the country for many years. In addition, countries may have second generation or third generation refugees. Often these long-term refugees have settled and are no longer included in the official counts of refugees. Yet they may need to be included in plans for possible repatriation of refugees to their countries of origin.

A third area of concern is that of internal refugees. Internal refugees, also called "internally displaced persons," are involuntary migrants who remain within the national boundaries of their country. Little is known about internal refugees for several reasons. As they fall outside the mandate of the UNHCR there is no one organization that gathers and publishes relevant data. In addition, the individual countries tend to not gather or publish data on internally displaced persons. Often, national resources are being used to assist such migrants to survive and the gathering and dissemination of information on them is considered to be a low priority. Without the knowledge of large internal movements of populations in a country, U.S. programs are in danger of supplying the wrong types or amounts of aid.

Finally, except for the figures on total numbers of refugees at national levels, there are virtually no data available on refugees. Other than a few small surveys, reliable information concerning the demographic and socioeconomic characteristics of refugees does not exist. Demographic data that are lacking include age and sex of refugees, as well as aspects of fertility, contraceptive use, health, morbidity, and mortality. The lack of such data makes it extremely difficult to prepare accurate estimates of population for planning purposes. Socioeconomic characteristics such as literacy, education levels, economic activity, and occupation are missing, as well.

### C. Former Soviet Union

The countries of the former Soviet Union have inherited a statistical system that is inflexible and highly inefficient. While better than none at all, these systems are frequently worse than

outsiders tend to suppose. Geared to providing decisionmakers timely access to a frugal selection of (principally macroeconomic) indicators, the statistical systems of the newly independent states collect only limited information on demographic and social conditions. Due to both resource scarcities and the generally low priority assigned to demographic and social statistics, these statistical systems have had to rely extensively on hand calculation. As a result, the data collected are often unsuitable for more than very narrowly specified purposes (such as a single table in an annual report). These circumstances militate against quality control and severely hamper further developments, such as the expansion of household surveys.

This situation could be remedied by technical assistance, including data processing equipment, and training of data collection and data management personnel.

Departures from international standards have negated the comparability of certain statistics, such as infant mortality rates and cause-of-death data for the former Soviet countries. Efforts to standardize are currently underway in many of these countries, but for the time being it remains hazardous to employ their official figures on these indicators for international comparisons.

The newly independent states of Central Asia warrant special attention, because they share some of the problems of Third World countries--particularly high fertility and the burden of rapid population growth. Largely unindustrialized and with few promising exports, these countries will find it difficult, if not impossible, to expand their family planning programs--to say nothing about improving their statistical systems. There is certainly a case for international assistance here.

Statisticians need to be sensitive to ethnic and political tensions, which can handicap the best-intended data collection and technical assistance efforts.

#### **D. HIV/AIDS and Sexually Transmitted Diseases**

Although it has been clear for a number of years that mortality estimates and projections for many countries would have to be revised due to AIDS mortality, the lack of accurate empirical data on AIDS deaths, the paucity of data on HIV infection for the general population, and the absence of tools to project the impact of AIDS epidemics into the future have all hampered these efforts. Currently, although the accuracy of data on AIDS deaths has not substantially improved, our knowledge of HIV infection has expanded and modelling tools are available to project current epidemics into the future.

As of mid-1994 over 985,000 cases of AIDS had been reported to the World Health Organization Global Programme on AIDS (WHO/GPA). Reported AIDS cases are a crude indication of HIV infections and AIDS cases. The actual number of AIDS cases is estimated to be much higher, around 4 million cases. This represents a 60 percent increase over the estimated 2.5 million cases as of July 1993. The proportion of AIDS cases estimated to have occurred in Asia has increased from 1 percent in mid-1993 to 6 percent in mid-1994, due

primarily to the rapid evolution of the epidemic in South/South-East Asia. The discrepancy between the reported cases and the estimated actual number of cases is due to 1) under diagnosis, 2) under reporting to public health authorities, 3) delays in reporting, and 4) the use of different surveillance case definitions of AIDS in different countries around the world.

AIDS cases represent HIV infections that occurred several years ago and do not give an accurate picture of the current HIV epidemic. The HIV incubation period--that is, between initial HIV infection and the development of AIDS--is estimated to be approximately 7-10 years. WHO/GPA estimates as of mid-1994 that over 16 million adults and over 1 million children have been infected by HIV. Currently 13-14 million adults are HIV infected. WHO estimates that 80-90 percent of the infections in children have occurred in Sub-Saharan Africa. Still, to this date, no one has estimated HIV prevalence on a country-by-country basis due to the lack of reliable data at the country level.

#### Data Sources and Issues

Our knowledge of the infection and spread of HIV and AIDS in countries around the world is based on a variety of reports and studies which are known to be incomplete and non-representative. AIDS case reporting, for example, from African countries to the World Health Organization has been estimated to be about 10 percent complete, due to a variety of factors, including those mentioned above. A knowledge of AIDS cases alone, moreover, is not sufficient for an understanding of the dynamics of the epidemic, due to the extended incubation period between initial infection and later development of HIV-related illness. Thus, even the most accurate AIDS case data would only provide a picture of the epidemic of infection as it existed as many as ten years ago.

As a result, there has been considerable attention paid to the collection of data on HIV infection among various population groups. In the early years of the epidemic, many of these studies were conducted in a non-scientific manner, and may have provided results that were not representative even of the population group that was targeted by the study. More recently, increasing attention has been paid to such issues as increased sample sizes, representativeness of the sample selection, geographic coverage, and confirmatory testing of HIV positive results. Consequently, both the quantity and the quality of seroprevalence data have improved markedly in recent years. Nevertheless, many biases still remain, and caution must be used in the interpretation of results.

There is considerably more information available for Sub-Saharan Africa than for other regions of the world. The International Conferences on AIDS in Africa have provided a superb venue for sharing information on epidemiological studies conducted in the countries of the region. Similar conferences in Asia and Latin America have not yet developed to that extent and data for these regions are very limited and scattered. The Pan American Health Organization is now urging member nations to provide information on HIV seroprevalence, but these systems have been in place for only a short period of time. In some countries in

Asia, where HIV transmission through intravenous drug use has been reported, little information is available for other population groups.

The Center for International Research, U.S. Bureau of the Census, developed and maintains the *HIV/AIDS Surveillance Data Base* with support from the U.S. Agency for International Development. Data are regularly compiled from the scientific and technical literature as well as presentations at major international conferences. The data base is used by the World Health Organization, other U.N. agencies, and U.S. Government agencies as well as various researchers worldwide as a unique compilation of HIV seroprevalence information for developing countries.

While there is much that we do not know about levels of HIV infection, for most countries in Sub-Saharan Africa infection levels for urban pregnant women have been measured at more than one point in time. However, pregnant women are not a perfect proxy for the urban populations as a whole. Pregnant women can be considered to be at somewhat higher risk than the general population since they are sexually active. They also are drawn from a limited age range, may be biased toward those in marital (formal or informal) unions, and tend to be younger than adult women in general, given typical age-specific fertility rate patterns. Unfortunately, there are no comparable data available for men. Questions of women's vulnerability to the infection as well as male:female ratios are difficult to answer since general population studies including both men and women are rarely conducted.

Another issue of data availability relates to information on the spread of HIV infection from urban to rural areas. In urban areas, data on high risk populations are more readily available. HIV infection levels of commercial sex workers and for sexually transmitted disease clinic patients are collected on a regular basis in Sub-Saharan Africa.

Rural areas present a more difficult problem, both for the potential lack of representativeness of the few studies conducted as well as the lack of repeated samples over time. For example, recent data from urban women in India show increasing HIV infection levels. Relatively few data are available, however, from the vast rural population of India making it extremely difficult to estimate national or even subnational estimates of HIV seroprevalence. Data from other countries such as Uganda, with severe epidemics, show a great deal of variation in HIV seroprevalence levels in the rural areas, reinforcing the need for more and better data from rural areas.

Nationally-representative seroprevalence surveys have not generally been conducted, largely due to concerns regarding cost, diversion of skilled manpower, and an understanding that a nationally-representative sample may not provide much useful information about the groups at greatest risk for HIV infection. Thus, in recent years sentinel surveillance programs have been developed to monitor defined populations for changes in HIV infection levels. Data from these programs, however, tend to reflect infection levels in urban areas. The reporting centers generally are hospitals or clinics located in the capitals of provinces (e.g., provincial capitals of Thailand).

Large-scale population-based national HIV seroprevalence surveys have only been conducted in a small number of countries. Among these are Uganda, Rwanda, Côte d'Ivoire and the former Soviet Union. In addition, population-based sample surveys have been undertaken in a variety of sub-national settings (i.e., Bissau, Guinea-Bissau; Benin; Bangui, CAR; Rakai district, Uganda). Data from the national surveys have provided to some extent a more complete picture of the epidemic in the country, but questions have been raised concerning the ultimate utility of such surveys. Increasingly, it has become recognized that such surveys leave unanswered many important questions. These questions have become the motivation and focus both of sentinel surveillance efforts as well as of surveys targeting specific geographic areas or population groups.

#### Population Impacts

As yet, relatively little impact of AIDS on mortality has been measured in developing countries, due largely to deficiencies in the measurement of mortality. The impact of AIDS will, however, be seen in the results of population censuses and surveys in many countries that will be conducted in the latter part of this decade. Indeed, some impacts are beginning to be measured. Levels of infant and child mortality in Zambia measured in a recent survey are 15 percent higher than those measured 10 years ago. Orphanhood status recorded in the Uganda 1991 census implies adult male mortality in the recent period (after the period of civil unrest) higher than that reported in the census of 1969. And a longitudinal survey being conducted in Masaka district of Uganda reports a doubling of the crude death rate as a result of moderate levels of HIV infection (8 percent of adults HIV positive).

As a result of the lack of empirically-based estimates of the population impacts of HIV/AIDS, the Center for International Research has prepared projections of the impact of HIV/AIDS over the next two decades for those countries with the most severe epidemics. In this process, we used mathematical modeling of AIDS epidemics to supplement the available empirical information on the extent of the current epidemic.<sup>1</sup>

Among the findings for the 13 African countries with AIDS-adjusted mortality were a doubling of the crude death rate over that expected without AIDS by 2010, large increases in infant and child mortality, and substantial declines of from 9 to 25 years in the life expectancy at birth at the peak of the epidemics. Not all countries will experience these impacts, but for countries with substantial AIDS epidemics in the general population the increases in mortality are inescapable.

In addition to direct effects, AIDS may also have indirect impacts on populations affected. For example, the survival of non-HIV-infected children may be endangered by the death of one or both parents. Similarly, the well-being of other non-infected household members may

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<sup>1</sup>"Focus on HIV/AIDS", World Population Profile, 1994 U.S. Bureau of the Census Report WP/94 Washington, D C

be threatened by the death of a principal breadwinner. Some studies are underway to examine the extent of these impacts. For example, a study in the Kagera region of Tanzania, near the Uganda border, is attempting to assess the direct and indirect social and economic impacts of AIDS in the households of the region. AIDS has already begun to dramatically revise our thinking about patterns and trend of mortality in countries around the world. In a number of cities and in five states of the United States, AIDS is already the leading cause of death in young adult males. In Abidjan, the capital of Côte d'Ivoire, HIV-related illness in 1988-89 was already the leading overall cause of death for males and the second leading cause for females, accounting for 15 percent of male deaths and 13 percent of female deaths. Life expectancy, which has enjoyed a 40-year period of advance, is even now declining in many of these countries. Recent evidence also shows infant and child mortality levels increasing in several countries most effected by AIDS.

Despite these impacts, AIDS will not overcome the momentum of population growth in most affected countries, particularly in Sub-Saharan Africa. Sub-Saharan Africa's current rapid population growth ensures that, despite considerable expansion in HIV infection, population growth will continue, although changes in population structure may result. In other developing regions, for example in Asia and in Latin America, a strong AIDS epidemic has the potential to reverse population growth, due to the initially lower rates of fertility.

#### Sexually Transmitted Diseases

Whereas HIV/AIDS seizes the headlines, other sexually transmitted diseases (STDs) create devastation of their own. In women, STDs can lead to pelvic inflammatory disease, causing lifelong pain, infertility, and ectopic pregnancy which can kill. Children are born with blinding eye infections. Men are left infertile. People die of advanced stages of syphilis. Furthermore, STDs multiply the transmissibility of HIV as much as ninefold.

STDs are a major public health problem in both developed and developing countries, but prevalence rates apparently are far higher in developing countries, where STD treatment is less accessible. Among developing regions, STDs appear to be more common in Africa than in Asia or Latin America.

The data on STDs are more variable in quality than that of HIV seroprevalence. The data that are available are few in number, of questionable quality and lack comparability. There are few surveillance systems in Africa. Surveillance of STDs poses its own unique challenges. For example, gonorrhea and chlamydia have similar symptoms. Accurate diagnosis of the STD is difficult to obtain unless laboratory testing is employed. There is a risk of misclassification and underdetection of STDs in studies of women because women with STDs are largely asymptomatic. A number of studies focus on high risk population reducing the number of patients that need to be studied. However, results from these studies are difficult to apply to the general population as there may be major differences in risk factors and cofactors.

STD control is one of the key components of HIV prevention and control. Epidemiological information is the first requirement in setting up a control program. Knowledge of the current incidence and prevalence of the various STDs is required in order to provide the appropriate drugs and in adequate amounts. The Center for International Research is currently in the process of collecting all available information on STD prevalence for Africa. In coordination with WHO, and with support from the U.S. Agency for International Development, an STD data base will be developed and maintained similar to the **HIV/AIDS Surveillance Data Base**.

#### **E. Data Dissemination**

A further deficiency in global population information is in the use and dissemination of data within developing countries. Too often, we have found that decision making in the private and public sectors is based upon anecdotal information, a misplaced trust in traditional methods of determining policy, or political considerations. The position of the Census Bureau is that a strong program of official statistics, readily available, user friendly, and designed to meet a variety of private and public sector needs is an essential prerequisite for sustainable development.

Less developed countries cannot progress successfully in today's world economy without modifying the type, structure, and format of the statistics needed to guide program development and policy formulation, whether those programs and policies be in the form of government decisions affecting the population as a whole, or business decisions affecting the growth of specific industries.

Consider the following points:

**Building statistical capability is a part of building the knowledge infrastructure of a country.** Building statistical capability is just as important as technology transfer or developing a country's education system. Without a statistical system that is responsive to the needs of all components of a society, the essential elements of business and government will continue to base decisions on erratic or inaccurate information.

**Statistics serve as a renewable and unique national resource that help guide and direct the actions of business, government, and private citizens.** If a country is to prosper then the free flow of information is vital--and that includes good statistical information. Not only must the information be appropriate but business, government, and citizens must be allowed easy access to reliable information. The unique value of statistics is that unlike national resources that are consumed when used, the more times statistics are used to guide decision making, the greater the value that is returned to the country.

**There is no time for delay in transforming statistical information into a useful resource for future economic growth in developing economies.** Development, free

markets, and useful statistical resources go hand-in-hand, and none is ever found prospering without the others. Delays in access to crucial data can cost countries billions of dollars in terms of lost economic performance.

We believe that statistics must reflect the needs of the users as closely as possible, and must result from a partnership of data producers and data users working together to develop the statistical resources. The techniques of creating and operating this partnership, and of developing a customer service orientation in the statistical communities of developing countries must be taught to agencies that have no experience in a market and service oriented environment.

Developing countries need our help in finding their way out of the old statistical practices which served them poorly, and in learning how to meet the demanding information needs required to enhance development opportunities.

***IIIA. How can the United States be most helpful to other nations in building sound statistical systems (i.e., financial, technical, or training assistance)?***

The role of the United States in improving and building statistical systems in developing countries can best be viewed in terms of specific U.S.-provided inputs to these systems. That is, what are the specific products that can be provided to enhance the collection, processing, analysis, dissemination, and use of statistical data? The position of the Census Bureau is that a program that integrates financial, training, methodology and software, and technical assistance is, in the long run, most conducive to building a sound, sustainable, statistical system.

**A. Financial Assistance**

The United States can state, as policy, that statistics play a vital role in development, and support such a statement by committing resources to this issue.

**Financial assistance to activities in the United States**

The Census Bureau has offered comprehensive programs of technical assistance and training for statistical agencies in developing countries for over 40 years. It is our strong belief that such programs are a vital component in the development process and that more can and should be done.

**1. Census Bureau statistical training**

The formal Washington-based international training program of the Census Bureau was established in 1947. Since then over 6,000 participants have graduated from the program; an additional 6,000 have received regional or country-specific training. In response to a worldwide customer survey conducted in 1992, the Census Bureau recently modified the program to make it more consistent with users needs, particularly in terms of duration and introduction of new technologies. However, the program has the financial requirement that it must charge tuition to cover its costs. Unlike similar training offered by other countries, there is no direct U.S. Government financing of the Census Bureau's international training program. Very few countries can pay the tuition required to support the comprehensive program the Census Bureau offers; in most cases a sponsoring agency such as USAID or the United Nations must be found.

**2. Census Bureau methodological materials**

The Census Bureau has developed methodological materials for conducting censuses of population, agriculture, and industry, as well as a series on designing and conducting household surveys. These multi-volume series cover all steps in conceptualizing and

implementing a survey or census, and thousands of sets have been distributed to developing countries in the past 30 years. However, the materials are now out of date and do not reflect the current technology available in survey and census data collection, processing, analysis, and dissemination. With financial support, the international programs of the Census Bureau could update these materials to reflect the state of the art.

#### Financial assistance to activities in developing countries

At present, statistical offices in developing countries receive financial assistance largely in the context of specific development projects. For example, a population census project sponsored in part by an international donor can be expected to provide financial inducements and training opportunities linked to the conduct of the population census. The same might hold true for other statistical operations in a national statistical office. It is unusual--if not unprecedented--for a donor to financially support the general improvement of statistics in a developing country.

A broad based program aimed at financial support of a range of statistical activities offers the advantage of permitting donors and counterparts to better target their assistance to the most pressing needs of a statistical organization.

U.S. Government regulations make it difficult to provide financial inducements and salary subsidies to counterparts in developing countries. However, other donors do not have this constraint. This argues for additional donor collaboration and coordination in providing assistance.

#### **B. Technical Assistance**

The United States can also assist in building statistical systems through the provision of expert technical assistance. The Census Bureau has provided technical assistance in over 100 countries on designing, planning, and conducting a variety of statistical activities that contribute to economic and social development. Technical assistance from the Census Bureau can be made available for a range of tasks and many types of data collection activities. For example, the Census Bureau can provide technical assistance in the areas of:

- Identification of information needs,
- Survey and census design and organization,
- Questionnaire design,
- Sample design,
- Data processing and software for processing surveys and censuses.

- Design of quality control systems,
- Analysis of survey and census data,
- Evaluation and use of data from secondary sources,
- Dissemination of data to users,
- Design and implementation of monitoring systems and evaluation studies, and
- Use of data in decision making.

Census Bureau technical assistance services provide flexibility in meeting the needs of statistical agencies and donor organizations, and have been furnished in many subject-matter areas and to many types of customers.

#### C. Training Assistance

The Bureau of the Census has been an innovator in the fields of computer processing, sampling, automated cartography, and computer assisted survey methodologies. Part of the Census Bureau mission statement is to "...share our expertise globally," and we have been doing that in the context of our international training program since 1947. Our graduates, some 6,000 strong, come from over 120 countries, and many have risen to positions of leadership in the statistical systems of their own countries.

The Census Bureau currently is offering over 40 courses lasting from one week to 5 months to our counterparts in developing countries. These courses cover the range of statistical activities from survey and census design through data processing to analysis, dissemination, and use of results. The applied, practical, approach of our training program makes it unusual, and in some respects unique among statistical training programs.

We believe that the United States can take a leading role in coordinating the input of a variety of donors who, individually, support statistics, but usually in the context of specific projects. An example of the type of coordination we support is the Interagency Census Coordinating Committee for Sub-Saharan Africa. The Census Bureau played a critical role in the formation of this Committee, and serves as its secretary. This Committee, with representatives from the Census Bureau, USAID, the World Bank, the United Nations, the Canadian foreign assistance agency, and others, meets quarterly to review the progress of population census activities in the countries of Sub-Saharan Africa. The Committee's mandate includes the coordination of assistance activities in order to maximize the impact of scarce resources.

The United States can take an active role in expanding the geographic, subject matter, and financial scope of this Committee. Such expansion can probably best be accomplished

through the creation of a central focus within USAID for statistical oversight and assistance. USAID's Office of Population provides such oversight insofar as the subject is censuses of population and demographic surveys. However, there is no central office responsible for the coordination of statistical assistance within USAID.

In brief, what the Census Bureau proposes is an integrated program that combines financial, training, and technical assistance to enhance the collection, processing, and utility of data in developing countries. There have been some notable successes when such a program has been implemented. In Honduras, for example, the USAID Mission and the United Nations supported the recent population census with a comprehensive program of assistance. The United Nations provided financial support to the Honduran statistical office to partially subsidize the personnel costs associated with the census. At the same time, the USAID Mission in Honduras financed extensive training at the Census Bureau and a program of technical assistance by Census Bureau experts. A similar success story was a rural household survey in Bolivia, where the United Nations, World Bank, and USAID collaborated to fund a comprehensive, integrated program of financial, training, and technical assistance.

*IIIB. What kinds of assistance are developing nations seeking from the United States to support data collection efforts?*

Because of its position as one of the preeminent data collection and processing organizations in the world, the Census Bureau receives hundreds of requests each year for assistance and training. In general, the assistance sought corresponds to the following areas:

- Designing and implementing population censuses, household income and expenditure surveys, health information systems, demographic surveys, and economic surveys and censuses,
- Sampling and statistical methods,
- Use of the latest technologies in collecting and processing data,
- Interpretation and analysis of the collected data,
- Use of data in decision making, policy formulation, and program formulation,
- Forecasting population estimates for small areas,
- Analysis of population data for social planning, and
- Generating digital cartographic base files for automated population mapping.

Due to their reimbursable nature, the international programs of the Census Bureau are able to respond to only a fraction of the requests that we receive each year for training and technical assistance.

*IV A. How successful are global efforts to measure international migration?*

Migration is one of the least well-documented components of population change. Statistics on internal migration (within a nation's boundaries) and international migration (shift of residence across international boundaries) are usually nonexistent or incomplete. The weaknesses of international migration data are caused by several problems that could be characterized as intractable or at least very difficult to overcome:

**A. Permanent migration across international boundaries is poorly documented or illegal in the vast majority of countries.**

Of the over 200 countries in the world, only three see themselves and are seen by the United Nations as "the main countries of permanent settlement." These countries regularly accept as permanent immigrants either a larger absolute number of foreign-born persons than any other country (the United States) or an exceptionally large number in comparison to the size of their total populations (Canada and Australia). Because it is in the interest of immigrants to register their international shift of residence if they wish to stay permanently, and if such a move is legal in the receiving country, data on legal permanent immigration to these three countries are reasonably complete. However, even in the countries that allow permanent immigration, some of those who apply as permanent immigrants may have actually entered years earlier in a legal temporary status or illegally, so the timing of their international migration is inaccurately recorded. More problematic, the worldwide demand for the right to permanently migrate to the United States, Australia, or Canada overwhelmingly exceeds the supply of places for legal permanent immigrants. Many legal temporary and illegal migrants enter and intend to stay permanently. Data on these migrants are poor. Therefore, even in the so-called "countries of permanent immigration," the true magnitude of annual immigration that leads to permanent residence is considerably higher than documented.

The governments of the great majority of countries reject the notion that foreigners can migrate permanently into their countries from abroad. International migrants who want to move permanently must put themselves in another legal immigrant category, such as "guest worker," refugee, or foreign student, or remain illegal. However, they intend and attempt to remain in the receiving country indefinitely. Although administrative records may record the various categories of legal temporary migrants, they do not fully reflect the reality of permanent residence, nor, of course, do they capture illegal migrants.

**B. Definitions of international migrants are not consistent, although the United Nations has worked to encourage standardization of definitions of the different types of international migrants.**

Part of the problem is that each country has its own legal or *de facto* categories for foreign persons in the country. For example, one country might define a refugee as

anyone inside its boundaries who claims to be fleeing persecution or warfare or starvation at home, while another country might refuse to classify most such immigrants as refugees, calling them by some ad hoc term such as "temporarily displaced persons."

**C. Countries vary enormously in their success at recording and tracking international migrants, including those entering and leaving their countries.**

Generally speaking, immigration is given more attention in national statistics than emigration. Some governments are thorough, with officials at every international entry and exit point entering into computers details of each person who enters and leaves the country. But most countries do not have the capability to track migrants at all possible border crossings. Besides, the motivation to record international migration is not the same in all countries for all categories of migrants.

To gather data on international migration, one can attempt to record flows of people, as when they cross at a border checkpoint, or one can try to measure the number of foreign-born persons in a country with population registration systems, censuses, or surveys. Comparing the recorded foreign-born population over time allows estimates of the flows of net migration. European countries rely more on permanent population registration systems to track the numbers of foreigners in the country at different times and estimate the intervening population flow. The United States, on the other hand, uses the decennial censuses and the Current Population Survey, both carried out by the Census Bureau, to count the foreign-born population. In any country, estimating net flows of international migrants from registration systems, censuses, or surveys is subject to undercounting of the population or of the foreign born, which can result in underestimation or miscalculation of net international migration flows.

Because of the foregoing weaknesses of international migration data, the world has only a rough idea of the numbers and characteristics of international migrants. Since many countries provide reports or estimates of the numbers of guest workers they have, or have sent abroad, some approximations of the international formal guest worker population have been attempted. The United Nations High Commissioner for Refugees (UNHCR) gathers figures from refugee camps and from countries harboring refugees, and compiles these figures regularly. Again, the resulting numbers are only an approximation of the actual number of refugees in the world, because some are undetected and uncounted, there is no firm agreement on who shall be classified as a refugee, and refugee populations often shift radically in number from one day or one month to the next, as recent events in and around Rwanda have highlighted.

Though figures on international migration are extremely faulty, there have been some attempts to compile or estimate the total number of people living outside their own country, and some trends are very clear in spite of data problems. Estimates are necessarily crude, but as of the late 1980s, some 80 million persons in the world were resident outside their nations of citizenship. Of the total, roughly 35 million were in sub-Saharan Africa alone. The prosperous regions of Western Europe and North America had approximately 13-15 million

each. Another 15 million or so were in the Middle East and Asia, and there were smaller concentrations in Latin America and Australia. This compilation of "foreigners" in the world, meaning people who have moved abroad and have not received citizenship, is a subset of all international migrants, because some countries do grant citizenship to some international migrants.

Conservatively, the total number of "foreigners" in the world is likely to have reached at least 100 million since the dissolution of the former Soviet Union. These constitute almost 2 percent of the world's population

The United Nations estimated in 1993 that 80-100 million people worldwide lived "outside their countries of origin," which presumably means the more inclusive concept of foreign-born populations worldwide. Of these, legal labor migration accounted for 25-40 million, and undocumented economic migrants were assumed to total about 20-40 million

Most recently, the United Nations estimated that the number of international migrants in the world, including refugees, is in excess of 125 million, about half of them in the developing countries.

Overall, there are far more men than women among international economic migrants, but international refugee populations tend to include more women who fled to relative safety with their children and elderly family members, while their husbands were engaged in warfare, imprisoned, or dead. Females predominate in the global refugee population, and 60-80 percent of refugee households are headed by women. In censuses and other counts held throughout the world between 1970 and 1987, of the total population enumerated as foreign born, about 48 percent were women

There has apparently been a global transition in recent decades from international migrants of higher to lower skill levels. The United Nations Population Fund (UNFPA) reported that, unlike the 1960s, when migrant flows were dominated by skilled workers and professionals, family reunification and growing levels of undocumented migration now tilt the balance in favor of unskilled workers. The greatly increased numbers of refugees fleeing from civil wars might also lower the average educational and training experience of international migrants.

Table 1 is a compilation of the world's refugees by region in two recent years. While UNHCR recorded a worldwide increase of 2 million refugees from year-end 1991 to year-end 1992, the number shifted sharply in some countries and regions. Asia reported a drop in the numbers of Afghan refugees in Pakistan and Iran, while Europe reported steep increases in refugees and asylum seekers coming from various countries.

Worldwide data on refugees and asylum seekers unfortunately exclude huge numbers of people in "refugee-like situations" who have not formally requested asylum or been formally classified as a refugee. Therefore, the numbers in Table 1 underestimate the true extent of the world refugee situation. The figures that are available, problematic though they are, depict a

clear, decisive trend over time. In 1970, there were 2.5 million refugees in the world as counted by UNHCR; as of 1980, 8.2 million; by 1985, 11.6 million, and by year-end 1992, 19.0 million.

Table 1  
Total Refugees and Asylum Seekers by Region  
of Asylum, 1991 and 1992

Region	December 31, 1991	December 31, 1992
Africa	5,274,600	5,393,200
Asia	8,600,700	7,240,100
Europe	1,173,200	4,379,100
Latin America	883,300	885,500
North America	1,020,100	1,041,200
Oceania	55,300	59,600
<b>GRAND TOTAL</b>	<b>17,007,200</b>	<b>18,998,700</b>

Note. These figures do not include Palestinian refugees, Cambodian refugees on the Thai border, an estimated 577,600 asylum applicants in Germany as of year-end 1992, or the backlog of those requesting asylum in the United States

Source: United Nations High Commission for Refugees, *The State of the World's Refugees 1993*, New York, Penguin, 1993, pp. 149-153.

***IVB. What steps can the world community take to measure flows of refugees more accurately?***

To measure international migration, including the refugee component, more completely and accurately, the world community could take the following steps:

- A. Work together in the United Nations framework to agree on statistical definitions of international migrants irrespective of the widely varying definitions in each country's laws.**

Support the United Nations in publishing guidelines for the reporting of international migration data. Agree with other governments that we and they will collect the data needed for the agreed statistical categories, and report the figures that way, even though immigration and emigration data for legal governmental purposes might not agree with the international classifications. Work with other developed countries and international organizations to support and help fund the implementation of the guidelines in developing countries.

- B. Support attempts worldwide to gather better international migration data on a flow basis and, in addition, to periodically count the numbers (stock) of foreign-born persons.**

Use the stock and flow data as a check on one another and to build a coherent and more accurate set of figures on global immigrants and emigrants. Increase efforts in the countries of origin to count emigrants to other countries. Give more emphasis to gathering and compiling information on the characteristics of international migrants. Focus on how we could get better estimates of illegal international migration.

*V. How can the United States best promote the reporting of comparable demographic information around the world?*

The reporting of demographic information, for example, from a census, can be seen as the culmination of years of efforts. Each stage of the process contributes to the end product and a failure in any one can have serious implications for the ultimate quality or utility of the effort.

The United States has a dual role in supporting and promoting high-quality demographic data around the world. The first of these is in the provision of much-needed technical assistance and resources for supporting the collection, analysis and dissemination of demographic data. The second role for the United States is as a leader in international cooperation.

**A. Technical Assistance and Training**

Technical assistance provides the mechanism for the transfer of technology, including technical skills, to counterparts in developing countries. As described above (Questions 1 and 3) the United States has played a major role in providing technical assistance to developing countries to strengthen statistical systems including programs to collect, analyze and disseminate demographic and other population information.

Technical assistance can be provided in a variety of areas. For programs focusing on population information, the following components are most relevant:

- Planning
- Data collection
- Data Processing
- Analysis
- Dissemination

Each of these areas is a key link in the flow of work from initial concept to finished product. Technical assistance inputs at each stage can ensure that data are collected in an accurate and timely manner, the analysis is performed according to high professional standards, and results are made available to a wide audience, both within and outside of the country.

**Planning**

A census or other major demographic survey is a huge undertaking that requires the marshalling of resources and careful attention to issues such as the timing of activities and the identification of critical points in the work flow. Many developing countries have historically been weak in census/survey planning. As a consequence, many such data collection efforts

are characterized by delays and inefficiencies that might have been avoided through more careful planning.

Plans for a census should encompass the entire range of activities--from initial questionnaire design and census geography through to final publication of reports, data analysis, and dissemination of findings. Planning should involve other agencies of government and relevant donors.

#### Data collection

Data collection is the activity that generally first comes to mind in thinking about census or survey operations. Technical assistance is needed in developing countries in sampling and/or census geography, census field operations, and management information systems support for those operations.

#### Data Processing

The explosion in the power and availability of microcomputers over the past decade has transformed the data processing operation and made it possible to process a census from data entry to final tabulations on microcomputers. Additional skills and training are needed for data processing professionals in developing countries. Technical assistance takes the form of training for foreign nationals either in the United States or in their own country and short-term technical assistance trips to these countries.

A key element in data processing technical assistance has been the availability of the **IMPS** software, developed at the Bureau of the Census for input, editing, and tabulation of census or survey data.

#### Analysis

Data analysis is a critical step in ensuring that the data that have been collected are made available for policy decisions and that they are used by the government and by the public alike. Data analysis, properly done, transforms the volumes of census data into focused examinations of particular topics of interest, whether they be estimates of mortality and fertility levels, an analysis of educational attainment and labor force trends, or projections of future housing needs.

With technical assistance, the Census Bureau can carry out joint analytical research with local researchers and analysts in developing countries, and can provide them sophisticated tools enabling them to complete a quality analysis of the data in a timely manner. Among such tools that are available are the **Population Analysis by Microcomputer** spreadsheets developed at the Bureau of the Census for demographic analysis of data from developing countries.

Dissemination

The dissemination of census or survey data is the final step in the process. Dissemination is more than the publication of census volumes or the presentation of survey results. Ideally, dissemination is keyed to the users of the data--the customers. These users include other government ministries, academics, businesses, NGOs, the press and other media, the public, and the international community. Multiple data vehicles are needed to reach these multiple communities of users.

Technical assistance in dissemination can help the producers of data to identify their user communities at an early stage and to plan for appropriate products to meet the needs of those users. For some developing countries, this represents a radical change in the normal way of dealing with data. For decades, "knowledge is power" has been an operating principal, and in many countries data have been closely held rather than widely disseminated.

**B. International Cooperation**

The United States is a major provider of technical assistance to developing countries for the collection and analysis of demographic data. But the goal of fostering the reporting and sharing of such data on an international basis also requires the United States to take a lead role in supporting international cooperation in this area.

Such cooperation has several short-term goals. The first of these is the coordination of assistance to developing countries. This coordination can reduce the overlap and redundancy that occasionally results and will also serve to reduce "competition" among donors for providing technical assistance to particular countries.

Cooperation can also serve to increase adherence to international standards in the data collection and processing of data. Greater comparability of statistics will result and the sharing of data will be facilitated.

Finally, cooperation can support the dissemination of available data to the international community. With appropriate and efficient use of technical assistance and with adherence to international standards, users, whether the United States Government itself or others around the world, will be assured of higher-quality and highly-comparable data.

There are several steps that the United States can take to enhance its already high international standing in the field of population statistics. One of these is to fully participate in various United Nations technical groups and commissions dealing with population-related issues. A second is to support participation at international conferences on demographic issues hosted by such groups as: various United Nations agencies, the International Statistical Institute (ISI), and the International Union for the Scientific Study of Population (IUSSP), etc.

A key element to this participation should be continuity. The international community should know that the United States is involved in these areas "for the long haul." It is important for those making these decisions to understand that there is no way to collect high-quality data on a sustained basis while making only uncoordinated, short-term investments. Substantial and long-term investments in human capital and institutional development are required before the benefits can be assured.

Mr. SAWYER. Let me just note for the record that my colleague from Wisconsin, Tom Petri, has joined us, and is taking part in the hearing this morning.

Dr. Haaga.

Mr. HAAGA. Thank you, Mr. Chairman, and members of the committee, for this invitation to testify on information needs for population and development policy.

I am the Director of the Committee on Population of the National Research Council of the National Academy of Sciences. The Committee on Population under the charter given by Congress to the National Academy of Sciences is a select group of scientists from several disciplines serving as volunteers to bring population sciences to bear on questions of policy importance to the U.S. Government and other organizations. My comments today are not based on a specific NAS study, but on several studies and conferences and my own previous experience.

Until last December, I worked for the Population Council in Bangladesh, advising the Ministry of Health and Family Welfare on many of these issues. In some of my previous jobs, I worked as a producer of survey data. Now I am mainly a consumer of the kinds of data that Scott and Judy were talking about.

The Committee on Population does policy-relevant research using data like the DHS and census data that were described. The draft program of action for the ICPD sets quantitative targets in three areas. One is education for all, particularly girls. Another is reductions in infant, child, and maternal mortality rates. And the third one is universal access to family planning and reproductive health services.

For those first two areas, we now have pretty good estimates for most of the world and can monitor progress quite well. The one big exception is maternal mortality rates, for which demographers can produce, at most, estimates of 5-year periods, often using indirect methods for much of the world.

The information needs in those areas, I argued, was mainly sort of program-related data, what programs work, how can we implement them, and how much do they cost.

The focus in my written testimony was on the third area. Healthy reproduction, as Scott pointed out, is a wider term of reference for population policy than we have been used to in the past. It means not only the ability to choose the number and timing of children, but also reductions in morbidity and mortality associated with reproduction. The world is dealing with problems of AIDS, and also other STD's, including those which cause infertility which is a major problem for lots of parts of the world.

The ICPD draft program of action contains language on abortion, alternative wordings which I think respect the profound differences among cultures and religions. Where abortion is legal, it needs to be safe. Everywhere, we need to have reliable methods of preventing unwanted pregnancies, and for treatment of complications and incomplete abortions both induced and spontaneous.

The wider definition of reproductive health includes conditions like female genital mutilation and violence against women. For a lot of these problems, as Scott pointed out, we don't have good estimates of levels and trends of the problems, or of what intervention

programs are the highest priority and the most cost effective, or how this might vary across settings.

The ICPD draft program, like most international documents, presents very global recommendations. And yet conditions vary an awful lot even within countries.

The NAS has convened, at the request of AID and the Mellon and Hewlett Foundations, a panel on reproductive health to look at the second generation issues, to look at what is known already and how the problems vary across countries and what the appropriate interventions would be.

A particular issue where the ICPD has issued a very simple call is for eliminating violence against women. We know enough from several countries to know it is a major public health problem and something can be done.

I was struck by the article in the Post this Sunday which argued that we need to go beyond the big scary numbers, that those are useful for getting agreement that something is a problem, but not particularly a guide toward appropriate action. And I think we are very much in the same situation with the developing countries. If this mandate is taken seriously, it is going to pose a new task for the research and data collection efforts.

There are two types of research needed which I argued have been slighted in the past. One is research on costs and financing. There is a rapid increase in the number of couples in the next several decades, due to past high fertility. This means that family planning programs would have to run hard just to stay in the same place for the next couple of decades.

Achieving the goal of universal access, while improving the quality and making services more comprehensive, is going to put a severe burden on management. Even with expanded resources, some strategic decisions have to be made and we just don't have much information on which to base decisions about resource allocation. This was the subject of a recent NAS meeting on resource allocation for family planning.

We have some global estimates and it is clear that the world as a whole can afford the things discussed at Cairo, but there are going to be some countries where rapid increases are coming up against limits on domestic public expenditures.

The second call that we made was for more research on implementation. There is a pipeline of good ideas corresponding to the pipeline of aid funds unexpended for many of the poorest countries. We need more experimentation and evaluation and sharing of experience on how to bring about the changes in large organizations that are required. If we are to move beyond exhortation, we need work on recruitment, training, staff development, logistics, staff supervisor relations, and management information.

USAID has funded a lot of what is called operations research dealing with these issues, to try to get some of the organizations and services moving. I think more is needed to correspond to the new demands and the new environment.

We talk a bit in the prepared testimony about population growth and the environment. There has been some work both by our committee and by some of the academies in developing countries and

we have funding from the MacArthur Foundation to do more work with the academies in China and India.

On the effects of population growth on the environment, our finding is that there are not enough local area studies. Data systems have to match the scale on which policymakers can act. The few that we do have contain some surprises and some success stories.

There are profoundly important questions on how institutions can adapt to changing size and age structure of populations and what the consequences are for soil and water and air quality. To do that, we need to be able to link data from different sources on small areas and follow them over time. And there are new techniques and methods in the field, such as geographic information systems, which make this feasible.

On the subject of migration and immigration and refugee movements of both voluntary and involuntary migration, I agree with Judy's comments that we are really woefully unprepared to give good estimates there.

The information situation on everything in reproductive health is an awful lot better in 1994 than it was in 1984 at the Mexico City Conference on Population, or in 1974 at Bucharest. A lot of the difference is due to the DHS surveys and their predecessors, the World Fertility Survey and contraceptive prevalence surveys that Scott talked about. The delegates at Cairo are going to have a much better basis of shared information to begin their discussions than any of these previous conferences have had.

I think these data and the analyses have affected policy. The area where I think it comes out most clearly is in sub-Saharan Africa, where until 10 years ago it was often argued that these population problems were problems for the very densely settled countries and concerns of the rich countries and not particularly African concerns. That has very much changed in the last 10 or 15 years, and I think a lot of the credit for the change has to go to those who have done the research and done these analyses and communicated them.

Many of the results concerning the impact of birth spacing and high parity on health and schooling were what helped to change the tone of the discussions. A recent NAS Panel on Population Dynamics in sub-Saharan Africa synthesized a lot of this research and filled in with some new analyses on topics like factors affecting contraceptive use, the effectiveness of the child survival programs, adolescent fertility, and demographic consequences of economic reversals. And each of these collaborative reports, done with African scientists, drew very heavily on DHS data.

We do point out that many of the topics of increased concern, particularly studies of the environmental impacts of population growth, are going to require a new emphasis on census data. Sample survey data are not really suitable for producing small-area estimates of the kind that are needed. Small-area data on basic indicators are also important for countries which are trying to decentralize decisionmaking, as they are in Kenya. We need continued training and collaborative research. Otherwise, such data can't be used in policymaking where it counts by the developing countries themselves. Thank you very much.

Mr. SAWYER. Thank you very much, Dr. Haaga.

[The prepared statement of Mr. Haaga follows:]

PREPARED STATEMENT OF JOHN G. HAAGA, DIRECTOR, COMMITTEE ON POPULATION,  
NATIONAL ACADEMY OF SCIENCES

Thank you for this invitation to testify on information needs for population and development policy. I am the Director of the Committee on Population of the National Research Council of the National Academy of Sciences. The National Research Council is the operating arm of the NAS, which was chartered by Congress in 1863 to advise the government on matters of science and technology. The Committee on Population, organized in 1983, consists of scientists from several disciplines serving as volunteers, charged with bringing the knowledge and methods of the population sciences to bear on policy issues of importance to the US government and other organizations. Much of the Committee's work on international population has been financed by USAID and the Mellon and Hewlett foundations. Before last December I was the director of a project on Maternal and Child Health and Family Planning, working with the government of Bangladesh. My comments here draw on several studies and conferences of the Committee on Population, and on my previous experience in several countries, but the inferences and conclusions are my own and not the product of a NAS report specifically on this topic.

The draft Programme of Action of International Conference on Population and Development (ICPD) sets ambitious goals for the international community, which in this case includes not only the UN agencies and the governments officially represented at the conference but the whole range of non-governmental organizations in rich and poor countries alike. Global documents such as the Programme of Action are useful for focussing attention on issues, redefining the terms of discussion on these issues, generating renewed commitment and energizing those working in the field, and later shaming those who have signed a document but not done much about it. It's "just a piece of paper", but pieces of paper matter.

I will argue that the effort to meet the goals to be adopted at ICPD will require a renewed effort in data collection and research on population issues, and that it is in both our national and a broader international interest to support the research effort.

#### Family Planning in the Context of Reproductive Health

The ICPD Programme of Action sets quantitative goals in three interrelated areas: education for all, particularly for girls; reduction of infant, child, and maternal mortality; and provision of "universal access to family planning and reproductive health services" (section 1.18).

These belong together, it is argued, because education is a key to long-term improvements in women's status and helps bring about reductions in fertility and mortality rates; and lower mortality rates are a necessary condition for achieving low levels of fertility compatible with stable populations. Access to family planning, in turn, makes it easier for poor population to achieve greater investment in education, women's empowerment, and low mortality rates, all desirable goals in themselves quite apart from their effects on fertility rates. For the first two areas, education and mortality, it is fairly easy to define indicators of achievement, and reliable estimates of rates now exist for most of the world. The exception is maternal mortality, for which demographers and epidemiologists can only produce very uncertain estimates for five-year periods, using indirect methods, for many countries. The research needs largely concern figuring out what programs are feasible in different settings, how effective they are, and how much they cost in different combinations.

Much of the discussion leading up to the ICPD has involved how to broaden the terms of reference, to embed family planning programs in a larger context of addressing women's

(and sometimes men's) "reproductive health needs". Healthy reproduction in this view includes more than the ability to choose the number and timing and children; it includes reductions in morbidity and mortality associated with reproduction. The draft programme states (in brackets, signifying passages still in dispute, and with two alternative wordings) that the main objective of public policy concerning abortion should be to prevent unwanted pregnancies, but women should have access to information, counselling, and safe services where abortion is legal, and health services should include in all cases management of complications and sequelae of unsafe abortion (sec. 8.25).

For family planning more narrowly defined, there are already some well defined and well measured indicators, such as rates of contraceptive knowledge and use, for most developing countries. But contraceptive use is not being treated as an end in itself, in these discussions; "family planning" is meant to help "couples and individuals meet their reproductive goals in a framework that... respects the dignity of all persons and their right to choose the number, spacing, and timing of birth of their children (sec. 7.12.a). It is more difficult to operationalize and to measure these concepts than to estimate contraceptive use rates, which are at most indicative of the broadening of human freedom and improvement of health, but not the whole story. For reproductive morbidities, including abortion complications, data are sketchy. For these areas the tasks for policy researchers include making the goals into operational definitions, collecting and analyzing baseline data, and measuring progress, as well as the program-specific tasks of evaluating cost-effectiveness and feasibility.

An independent NAS Panel on Reproductive Health, requested and funded by USAID and the Mellon and Hewlett Foundations, has begun work on the "second-generation" issues that

the commitment at the ICPD will raise, both for the international agencies and aid donors and for the governments of developing countries themselves. This Panel has the task of helping set priorities for intervention programs, assessing what is known about the magnitude of various reproductive health problems and about the effectiveness and feasibility of interventions, and how these vary across regions. This review will also help provide focus to research and data collection efforts: of the vast number of things we do not know about the problems and the programs to deal with them, which are the most crucial uncertainties that have to be resolved for making decisions about program design and resource allocation?

There are two types of research and data collection that in my view could particularly improve the process of making policies to implement the ICPD Programme of Action. Both have to do with the relatively neglected "supply side" of family planning and reproductive health programs, or more properly the interactions of services and users, rather than information only on clients and potential clients, important though the latter are.

One concerns program costs and financing. Due to the large numbers of couples entering peak ages for childbearing, and the increasing reliance on modern contraception for fertility control, the demand for family planning services is projected to rise rapidly. In countries like Bangladesh, Jordan, Kenya, Nigeria, and Pakistan, the number of women in childbearing ages will increase by more than a third during the 1990s. To sustain current rates of contraceptive use and to expand services in line with projected increases in demand, will in some of these countries mean doubling or even tripling the numbers of couples served within the decade. At the same time that the numbers of potential clients are growing rapidly, family planning programs are being pressed to offer services of higher quality and more

comprehensive services to meet long-neglected reproductive health needs of women. Many of the reforms called for in the interest of improved quality will not require more funding, in all likelihood. Attention to reproductive health services and higher-quality services, even when they add to costs, may well prove in a larger view to increase cost-effectiveness, increasing desired outputs more than proportionally to the increased cost of program inputs. But even salutary reforms take time, managerial attention, and resources to implement. In many countries family planning programs will be faced with the need to expand, improve efficiency, and improve their product all in a relatively short time.

The background papers for ICPD do give some global estimates of resource requirements (section 14.11), a practical topic which documents from preceding international conferences on population generally ignored. Estimates of the required increases in expenditures during 1980-2000 have been based on various assumptions, but generally find that increases of between 3 and 5 percent per year are required to maintain a fertility decline at current pace. But as several participants at a recent NAS meeting on resource allocation for family planning observed, the global estimates mask considerable variation among countries. And there is very little information on the rates at which different elements of programs need to expand as the numbers of clients expand, and which elements should still be subsidized as programs mature.

The second area for which I would urge increased attention in funding policy-relevant research is on how to bring about change in large organizations delivering (or funding) geographically dispersed public services in developing countries. Our lists of unimplemented good ideas are large, and will likely expand tremendously as a result of the ICPD. Many of

the reforms in existing programs, and programs to address previously neglected needs, will have to be implemented by Ministries of Health and Education and even large NGOs, that have their own organizational cultures and relations among managers, supervisors, and service providers that make them resistant to change. The ICPD Programme of Action will include many recommendations not addressed to the public sector, of course, but inevitably many will require at least the acquiescence, and more often the active support, of the public sector.

There is a growing "pipeline" of good ideas for changes in family planning programs, corresponding to (and caused by many of the same factors as) the pipeline of unspent foreign aid for many of the poorest countries. It is a familiar paradox that many of the poorest countries, and within them the sectors most in need of outside technical and financial assistance, find it hard to spend the money they do have expeditiously. One of the defining characteristics of underdevelopment is the lack of organization and management information required to put resources to their intended uses without waste and delay. This is not at all to argue against providing the financial resources (or against coming up with good new ideas), but to argue for at least a proportionate increase in the effort that goes into helping those on the receiving end of both money and ideas to figure out how to implement change. This would require more research, experimentation, and monitoring on such topics as staff recruitment and training, career paths, supervisor-staff relations, management information, and logistics. Without these, many of our calls for higher-quality and more comprehensive services will remain just exhortation, and resources provided by both the international community and local governments will be wasted.

There are useful examples in the population and health sectors of what is variously called "services research" or "operations research", testing ways to make services more efficient and effective. USAID has funded much of this work, for example through its cooperative agreements with the Population Council and other institutions.

The draft Programme of Action makes a simple call for eliminating violence against women (section 4.4.e). This is a subject that needs more information and publicity, on the magnitude and the particular manifestations of the problems, and on the types and relative success in different settings of efforts to prevent violence or mitigate the harms. This is not a call for delaying action on the ICPD proposal, while we study it. The project I directed in Bangladesh collected data over the course of ten years on causes of death for women in rural Bangladesh, intended to help in planning new government programs to improve services for pregnancy and delivery. We were startled to find that more women's deaths in the relevant age ranges were due to violence (homicide and suicide, difficult to distinguish in these circumstances) than to pregnancy-related causes. This does not appear typical of developing countries as a whole, I should add -- in fact, there were large persistent regional differences within Bangladesh, showing that there is no such place as "developing countries" for which sensible policies can be designed.

There has been a very useful shift in the ways we think about the epidemiology of injury in the United States in recent years, as a major public health problem, the epidemiology of which needs to be understood to provide guides for prevention and treatment at different stages. A recent series of reports from the NAS brings together the results of research in a wide range of disciplines on the causes and prevention of violence. This work has mostly

focussed on the US, though international comparisons have provided a lot of the stimulus for new ideas in this field. This is an opportunity for mutually beneficial collaboration, because violence specifically directed against women is a problem shared by rich and poor countries, and because it has received so little serious attention in the past. How much of the US research is relevant to other countries, and vice versa, we just do not know. More importantly, a valuable international trade in ideas for prevention and treatment may be possible. If this part of the Programme of Action is taken seriously it will create significant new demands on researchers and program evaluators.

#### Population Growth and the Environment

A key phrase in the draft Programme of Action sets out a basic objective as "to facilitate the demographic transition as soon as possible in countries where there is an imbalance between demographic rates and social, economic, and environmental goals, while fully respecting human rights." (section 6.3) This wording balances several concerns. It avoids defining the problem as simply too many people or too rapid growth in poor countries -- it is the imbalance between demographic rates and their goals, not just our goals, or global concerns, that matters most directly to the poor countries. The Programme of Action talks about both accelerating the declines of both mortality and fertility rates, the "demographic transition" to low levels of each, both declines being causally connected parts of one historic process. Implicitly this phrasing recognizes that the situation and appropriate policy responses will vary among countries, and among regions within countries. The world as a whole might not be facing a Malthusian catastrophe, but parts of the world like Bangladesh and Central Africa

already suffer from the inadequacy of nonhuman resources and low investment in the human capital required to provide a decent living.

The debate about international environmental issues is often conducted in confusing terms, with global pronouncements illustrated by very local examples. This does not correspond very well to what is needed for making policies that address groups and geographic areas somewhere between the level of the world and the village. "Think globally; act locally" is a good bumper sticker but not compelling policy guidance. "Think regionally; act regionally" might be more useful, and data systems have to match the scale on which policy makers can act.

There is a continual danger of polarization in discussions of environmental consequences of population growth, with those in rich countries preferring to talk about the threats to the global commons posed by unrestrained population growth in poor countries while those in poor countries know perfectly well that their per capita contributions to emissions of pollutants and greenhouse gases and their demands on nonrenewable resources are much lower than those of citizens in rich countries. This point was made in a recent report from the NAS Committee on Human Dimensions of Global Change. When the discussion is carried on in less global terms, with a focus on soil and the quantity and quality of water resources, then all parties are more likely to see benefits to themselves of actions to reduce the environmental impact of population growth. The most direct and visible effects of population growth and resource depletion are felt locally, by the poor, perhaps especially poor women.

There have been surprises from the few detailed studies of population dynamics and environmental degradation over time. Recent reports from Machakos, a crowded district in east-central Kenya, have shown little effect on land quality of increasing rural population density. A case study of Mauritius included in a recent NAS volume on Population Growth and Land Use showed very rapid and successful adaptation during the 1960s and 1970s to a looming catastrophe. In areas with rich deltaic or volcanic soils, like Java, Bengal, Rwanda and Burundi, city-like population densities have built up in rural areas due to economic institutions that foster relatively unproductive intensification of labor in agriculture; the crucial policy questions include whether these processes can smoothly accommodate continued population increase. Environmental consequences of population growth are not simply predictable from starting conditions of soil and water and rates of fertility, mortality and migration. Institutions like land tenure, income distribution, and arrangements for sharing common resources mediate the effects. Research and data collection linking the environmental characteristics, the demographic changes, and the social and institutional adaptive processes would give us an understanding of environmental change much richer than single disciplines or data sources could produce.

### Migration

Two important sections of the ICPD Programme deal with both internal population distribution (sec. IX) and international migration, both intended and unintended (sec. X). One major objective is to "foster a more balanced spatial distribution of the population by promoting in an integrated manner the equitable and ecologically sustainable development of major sending and receiving areas..." (sec. 9.2.a) This highlights a major task for our

research and data collection on the environmental effects of urbanization. There is a growing literature on pollution in the cities of developing countries, and some time series of data on local air and water quality. But there has been little integrated research on particular cities and their migration hinterlands, documenting the impacts of urbanization on land use and the environment over time. There is a general presumption, reflected throughout this section of the Programme, that less internal migration would be desirable, and it would be preferable if people would stay in rural areas or in smaller cities. But to my knowledge there is little basis for choosing on environmental and economic grounds between alternate spatial distribution for a given size and rate of growth of population. The NAS, following last year's "Population Summit of the World's Scientific Academies" in Delhi, has started exploring ways to conduct policy-relevant collaborative research with scientific academies in China and India, and possibly other countries as well, on population growth and land use, using both rural and urban case studies.

The draft Programme of Action itself says that research "to improve the understanding of the causes and consequences of migration and mobility, whether internal or international, is urgently needed." (sec. 12.25) There is a growing body of research on international migration to the United States, and on the intended and unintended effects of legislation like the Immigration Reform and Control Act of 1986. Speakers at a recent conference on US Immigration Statistics sponsored by the Committee on National Statistics and the Committee on population emphasized the importance of distinguishing among immigrants of different national origins, and among refugees, legal, and illegal immigrants, since their economic and educational success, and impacts on public revenues and public programs and on the larger society vary considerably.

Sharon Stanton Russell, writing in a summary volume issued by the NAS Panel on Population Dynamics in Sub-Saharan Africa, concluded that "international migration flows in Africa, as elsewhere, are notably volatile, unpredictable, and hard to measure." (p. 314) This is true for non-crisis migration, and still more for the refugee flows. Our ability to predict involuntary migration is feeble. Data collection and evaluation on the humanitarian response to refugees' predicaments may be the more immediate as well as more feasible concerns for researchers.

#### Mechanisms for Improving Information

Ten years ago, at the time of the International Conference on Population in Mexico City, and still more twenty years ago, at the Bucharest conference, little was known about the fundamental determinants of population change, the levels and trends of fertility and mortality, for large parts of the world, particularly in sub-Saharan Africa. The discussions in Cairo start from a much better base of shared information. The difference is due in large part to the efforts of the Demographic and Health Surveys project, about which participants in the second panel today can provide more information. I have been involved in managing demographic and nutrition surveys in developing countries and am awed by the ability of the DHS staff, and those who worked on the World Fertility Surveys and Contraceptive Prevalence Surveys, the projects that preceded the DHS, to get the job done in very diverse, often unpromising, settings. There has been a considerable effort in making the results available to policy makers within the countries studied (both by DHS staff and those of other institutions), and in on-the-job training of scientists from the countries concerned. The DHS

data are an accessible and growing resource for everyone working on any population and health issues in developing countries.

Basic results from these surveys have changed the terms of the policy debate in many countries. For example, I believe that it was the shock of finding unprecedentedly high fertility rates in Kenya in the late 1970s, forcing revisions in estimates of population growth, that helped focus high-level attention of Kenyan policy makers on their previously low-profile family planning program. Consistent results from DHS showing the effects of short birth intervals and high fertility on children's nutrition and mortality risks helped define high fertility as an immediate concern of Africans, even those living in fairly sparsely populated places, not just as a piece of a long-term and global problem of greater relevance elsewhere. A NAS Panel on Population Dynamics in Sub-Saharan Africa has produced a series of seven major studies, each involving international teams of scholars, on topics centrally connected to the ICPD agenda, including factors affecting contraceptive use, changes in the social context of adolescent childbearing, the effects of child survival programs, and the health and demographic consequences of macroeconomic reversals. Each report drew heavily on DHS data.

Good news, bad news, and mixed news from these surveys have all led to salutary re-thinking of policy. Fertility decline has lagged behind mortality improvements in many African countries, though there is now evidence from successive surveys in Kenya, Zimbabwe, and Botswana of sustained fertility decline. In Bangladesh, the evidence from successive national surveys both of increased contraceptive use and greater immunization coverage (and possibly accelerated child mortality decline) have provided renewed hope to a

country that can really use it. The picture of causes and sequencing of the demographic transition has been made much more realistic and varied by the cross-national comparisons made possible by these survey projects. Contrasting with Bangladesh, where the social conditions for fertility decline seem unpropitious but the decline has started anyway, are several Middle Eastern populations with high average incomes and even rates of women's literacy, but little evidence of fertility decline.

From the DHS, for example, we learn that virtually all women in Bangladesh now can name spontaneously at least one method of modern contraception, so information programs can leave behind the basic mass education and turn more to educating adolescents and providing information about the advantages and disadvantages of different contraceptive methods and how to use them more effectively. DHS surveys also allow some fine-grained analyses of social and demographic differences between sub-groups, like urban and rural residents, men and women, older and younger cohorts, and the educated and uneducated. These analyses can help improve both the design and targeting of programs.

It seems odd to say so, given the plethora of useful analyses of DHS data that have already been published, but the data are under-utilized. There are features of the DHS data that have not been used extensively in program design and evaluation. Two areas where the DHS program set out to improve on its predecessors were the collection of data on child health and the collection of community-level data: both types of data could be used more extensively for policy-relevant research. Using one-round survey data for program evaluation is difficult for a number of methodological reasons. Several speakers at a recent NAS meeting on Resource Allocation for Family Planning concluded that more useful

estimation of the impacts of programs on behavior could be gained if DHS data were supplemented by follow-up interviews and by more detailed economic information, perhaps for subsets of the DHS samples or countries.

The cross-sectional nationally representative surveys like the DHS do not produce all the information needed for policy decisions. DHS-type surveys are not usually suitable for producing small-area estimates of the type needed for the studies of local environmental impacts of population change discussed above. For many purposes there is no substitute for census data, which can be disaggregated to produce basic area-level information on the size and structure of the population. Technical advances in data storage and retrieval and computing have made census data much easier to handle and to link to data from other sources in recent years. As a recent NAS meeting on information needs for family planning program evaluation heard, methodological advances, notably the development of geographic information systems (GIS), make it feasible to link data on land use and vegetation patterns from remote sensing, data from resource surveys of other types, and census data, across a wide area and followed over time, without getting lost in the detail. My own impression is that GIS is still at about the stage that steam engines were when used only for pumping bilge out of deep mines: much more could be done with these tools, but we are only dimly aware at this point of what the uses might be.

These new applications cannot be fully exploited, though, if the basic census data are neglected. A lot of the basic facts about the world that policy makers (and private sector decision makers) need to know come from censuses, or more precisely, from combinations of census data and survey estimates of under-coverage and inter-censal rates of change.

There is a long tradition of training and technical assistance from the US Census Bureau and from UN agencies for their counterparts in developing countries. But there are several large countries that received much less assistance for censuses in the 1990 round than in the 1980 round, and this may be one reason that the quality of the census data, and their usefulness for policy research, suffered. When I first became interested in population issues, data from the 1980 round of censuses were not yet available. I remember then that differences between the high and low estimates by respected demographers of the population of China were greater than the entire population of the United States. More recently, there has been considerable uncertainty surrounding estimates of the population of some other demographic giants, notably Nigeria.

Besides the national surveys and censuses, there are more intensive research methods that also produce information useful for designing and evaluating policies. Much of the context required by the NAS panel that assessed adolescent fertility in West Africa came from linking ethnographic research with data from household surveys; the panel came to the conclusion that despite falling fertility rates, adolescent fertility is a growing social problem for these countries, because of the interference with women's educational progress and welfare and status in the cities. Ethnographic methods are particularly useful for research on topics like illegal migration, for which the less intensive standardized interviews are unlikely to elicit useful information. Much information on the effectiveness of child survival programs both in Africa and in South Asia has come from demographic surveillance systems, following defined populations over a period of years.

How Do these Efforts Further US National Interests?

The reasons for the US involvement in such data collection and research are, I believe, the same as the reasons for supporting the programs that the research is meant to inform. These include the humanitarian, economic, political, and environmental benefits that would come from increased attention to reproductive health and acceleration of the demographic transition.

Humanitarian Concerns. A primary motive for continued US assistance to international efforts in reproductive health and family planning is that high fertility and reproductive morbidities cause a great deal of needless death and suffering around the world; we have cost-effective technologies (and could develop more) for reducing this burden, and so should do our best to make them widely available. Supporting the more actionable recommendations from the ICPD, on issues such as reproductive health and family planning, increased education for women, and gender equity more generally, and mitigating the impact of population growth on the environment, would all fit with the goal of "crisis prevention" that has been announced for American foreign policy.

Sustainable Economic Growth. A major study published by the NAS Committee on Population in 1986 concluded that there is no simple correlation between population growth rates and the increase of per capita incomes, nor evidence that availability of nonrenewable resources posed a direct constraint on the possibilities of further growth. But the report did conclude that "slower population growth would be beneficial to economic development for most developing countries". For some of the least developed countries in Africa and South

Asia, there is evidence that slowing the rate of population growth allows a deepening of public and private investment in human capital, a necessary condition for modern economic growth. It is in our best interest as well as theirs for these populations to escape degrading poverty.

Both the old and the new cliches in this field ("Development is the best contraceptive"; "Just do family planning well"; "Pay attention to women's education, then child mortality and fertility rates will fall whatever happens") are all sort of true, in different mixes at different times in different countries, but they are quite useless as guides to specific action by policy makers confronting real problems. A lot is still not known about how particular policies will affect different components of population growth and redistribution and how those in turn affect human welfare. Making progress on these goals will entail learning, with organizations and individuals trying to make sense of their environments and trying different things to see what happens, communities adapting to new circumstances, and problems being redefined rather than solved once for all.

Mr. SAWYER. Let me go back to Dr. Radloff and ask you if you could expand on the comments that you and others have made about the kind of measurements that can help us to evaluate success or failure, or needs for change in direction of the assistance efforts that we are currently making and are thinking about?

Mr. RADLOFF. Much of what we are doing is through the census activities and particularly through the survey work, especially in these new areas that we are beginning to look at, STD's, HIV/AIDS, adolescent information, and abortion-related information.

In terms of measurements needed for evaluation, we are looking more carefully at time series information, using survey data to look at either to follow individual communities over time or individual respondents over time to get a better sense of the impact of—

Mr. SAWYER. You are talking about just general absence of longitudinal work?

Mr. RADLOFF. That is right. Well, within the context of the survey data we do collect some retrospective information from respondents. What we don't have is very good information on time series that allows us also to look at the impact of changes in the service delivery setting over time, at the same time as watching behavioral change.

Mr. SAWYER. USAID is an absolute leader in the world in terms of population, the kind of work that AID has done to establish strong correlations between declining fertility rates and the availability of family planning. The education of women has changed the face of population work throughout the world. It has altered the terms of debate.

Are there other factors, causal factors, for which data are lacking and for which research could provide similar kinds of quantum leaps in advancement of policy?

Mr. RADLOFF. We could use more and better information on status of women, as a background factor.

As you say, USAID has been a leader not only in family planning, but in the data collection efforts. I think we have always been careful to, when we expand programs into new areas, to look at the needs based on the data very carefully and to develop programs based on operations research testing out new approaches. So data and research play a very important role as we expand our work in new directions. It is through these efforts that we can determine the nature and extent of needs and can test interventions. In turn, these efforts can guide investments in service delivery systems, making them more effective in responding to needs.

Mr. SAWYER. One of the concerns that I have talked about in other venues has been the difficulty in providing appropriate data to measure economic activity. For example, in places like the emerging market economies of the former Soviet Union, there is an absence of appropriate data by which to measure the potential for benefit. I suspect that we lack similar kinds of data in terms of population development in many parts of the world.

One of the things leading up to the change that took place 5, 6 years ago, was the ability to provide early warning. The work that CSCE has done in terms of early warning and confidence building has been very important.

Can we or developing countries provide understanding of indicators of potential displacement, causes of internal conflict, the kind of fundamental indicators of instability that has led to the displacement of large numbers of people?

Mr. RADLOFF. That is a very difficult area. The underlying factors are, as you mentioned, rapid population growth is one of them, environmental degradation, political instability, and poor economic growth.

Mr. SAWYER. Yes, we are talking about cause and effect, and not even sure which is the cause and which is the effect. And in some circumstances they may be blurred.

Mr. RADLOFF. They are all intertwined. I mean, it is possible to track these measures of these changes. I think you would have a hard time knowing exactly when disaster will strike in any one situation.

Ms. BANISTER. Right. To some extent there is a random element all the time, such as when Rwanda is going to explode or some other country is going to explode—but some of the kinds of data that are gathered in the surveys and censuses supported by USAID can give us something to grapple with in our analyses that might give us some early warning.

One thing to look at closely is data on the ethnic makeup of populations and the geographical distribution of those ethnic groups. And then using the objective data on ethnic information, or religious, whatever you have in your surveys and censuses, then combine that with social or anthropological information about how these groups relate to each other, what their attitudes are toward each other. You might be able to get some early warning out of that.

Mr. SAWYER. I don't know that you can predict when things will happen. But I certainly think you can begin to evaluate levels of risk when factors come together. It may well be that the kind of explosion that you talk about doesn't occur for a very long period of time. But you can know often intuitively when those conditions exist. It seems to me that you may well be able to predict when they are coming together.

Ms. BANISTER. Right. Often economic surveys or censuses will give you some feel for some crisis looming in agriculture or in industry or some other part of the economy. Poverty measures of differences, growing differences between the rich and the poor, for example, that kind of thing can trigger your red flag, you know.

Mr. SAWYER. The Bureau has done a lot of work, Dr. Banister, with many different countries in attempting to reconcile the work that has gone on in demographic measurement. Are there differences in definitions that continue to impede the usefulness and comparability of data?

Ms. BANISTER. All the time, all the time. I am sure my colleagues here and in the panel to follow will be able to give you numerous examples they have come upon of conflicting definitions of something. The concept we need is that even if governments have different legal definitions of something, you can still have an agreed upon statistical definition for the world. And gradually, if the United Nations puts that out and we all support it together, then we start gathering data and reporting it in the same way, and it be-

comes more comparable over time. The data on refugees and international migrations are truly terrible, partly because of the lack of any comparability and definition.

Mr. SAWYER. We have no notion of where that 19 to 20—well, after Rwanda it may well be over 20—million leave off, and to begin to join the 30 or more million who are migrants, or the hundred or more million who are foreigners. There is a blur among them.

Ms. BANISTER. Right, it is very weak. Different people attempt to estimate different categories of international migrants, and some are stronger than others. Like labor migrants, there are better data on formal guest workers than other kinds. But on illegal migrants, the data and information are terrible.

Mr. SAWYER. Is it true that the Census Bureau is not a participant in the U.S. presence in Cairo?

Ms. BANISTER. At the moment, no. We are a participant in the sense that we have prepared a lot of useful information by the thousands to hand out at Cairo. The maps that we have handed to you, the eight demographic maps showing, for example, adolescent fertility around the world or levels of fertility, different measures like that.

We also have done for the Cairo Conference this volume on the world population situation, which is about as up to date as you can get. And it includes a chapter on the HIV/AIDS epidemic and its demographic impact around the world, which is very important and will be useful there. So, yes, the Census Bureau is there whether we are physically there or not, because of the impact of the work we are doing.

Mr. SAWYER. I am not suggesting that it would be all that useful to have you carry along luggage in which all this is packed, but it seems to me that interpreters of the data would be enormously useful in that kind of setting. Particularly where there is so much informal communication, particularly among the scientific participants from around the world and those who come in advocacy of policy positions.

That brings me to, Dr. Haaga, to you. You point out how basic results from surveys have changed the terms of policy debate in many countries. Those are your words, not mine. But I certainly hope to borrow from them frequently in the future. And yet you argue that the data are underused.

How better can we contribute to the effective use of the kinds of things that we have been talking about?

Mr. HAAGA. A couple of ways. One of the problems in poor countries—that I observed particularly in the Government of Bangladesh—is it is not good enough simply to publish the study. The top civil servants and the minister have no staffs. They simply wouldn't have time to try to read the reports. They have no staff and very often they need people to do the sort of digesting of reports and data analyses for them. They simply don't have a call on local academics or they don't have this sort of panoply of local research institutions. Often the planning commission or a census bureau is just a data producer and not an analyst, the way we have in this country. I think AID, partly through some of its training work, and the Census Bureau through its training work, have done

something on this, but in a lot of ways we need to create an audience for the policy research that is done.

I think also on this side there are areas where the DHS surveys greatly improve on their predecessors, as in the collection of health data and community level data on all sorts of resources. And these have not been as extensively used as the basic data on demography and the contraceptive use and contraceptive knowledge data. We could be commissioning more of the comparative studies on some of these topics and just putting the results out in a lot more ways.

Mr. SAWYER. Thank you. I have monopolized enough of your time. Mr. Petri has graciously observed that Mrs. Morella was here before he was, so let me recognize Connie Morella.

Mrs. MORELLA. Thank you. This is a great subcommittee. Thanks, Mr. Chairman, for arranging for this very, very timely topic to be discussed at this subcommittee hearing.

It is interesting how things begin to come together. This morning was the launching of a report by a working group of CSIS on global HIV/AIDS, with recommendations, commenting on it as a U.S. security risk as well as the implications and strategies in terms of what we must do about it, the discrimination. Great emphasis will be on what you have all mentioned, which I believe in very strongly, and I know will be part of the Cairo Conference thanks to your help, and that is empowering women, empowering women in terms of material and child health care, reproduction health family planning, education, and of course the statistical materials that you are trying to pull together.

Incidentally, I notice that Kate Grant is here. She was at the morning breakfast representing the Foreign Affairs Committee that has been following through again with recommendations that USAID has been committed to.

I guess one of the things I want to bring out in terms of HIV/AIDS is that you hear a statistic that over 16 million people are currently infected, and most of them in Asia, and it is growing, and that by the end of this decade there will be 10 million orphans as a result. I wonder about how many people are not computed into that statistic that have HIV, in that, No. 1 they haven't been tested, they don't think they are at risk, they don't see any out, and it takes 10 to 15 years very often for it to develop. I don't know whether you would like to, any of you or all of you, make any comments that you might have on that idea.

We also heard this morning in some comments that we begin to neglect the fact that when we talk about migratory peoples, we forget the military are really migratory, going from place to place, and in terms of picking up the infection, et cetera. Would you like to comment on that?

Ms. BANISTER. I would actually like to ask my leaders of the HIV/AIDS database and analysis here, Peter Way and Karen Stanecki, if they would like to comment in response to your question, because they are the experts and I am not.

Mr. WAY. Good morning. My name is Peter Way. I am in the Center for International Research of the Census Bureau. Your first point was that perhaps even our statements of the number of infected people do not really take into account people that may not be identified as being at high risk or not yet showing any symp-

toms of HIV infection. And it is true that one of the big lacks in the HIV/AIDS data is information on low-risk populations, on the general population. There have been a lot of studies of high-risk groups, but translating information on studies of a few high-risk groups into information on the general population is quite difficult.

There are increasing numbers of sentinel surveillance systems being put in place around the world that would collect information about certain types of general population samples. For example, women coming into prenatal clinics are frequently set up as sentinel surveillance groups so that those are tested. And from those, extrapolations can be made to the total population.

The second point is a very good one about the military as a migrant population and at risk for HIV infection. There have been—there is a working group, international working group that has met on at least a couple of occasions to address this issue. There are relatively few data on infection in the military, but the number is growing, and there is some recognition of the military as a factor in the spread of HIV around the world.

Mrs. MORELLA. I appreciate the information and the beginning of focus on the world's military. I think it is clear that we still have a long way to go in terms of enlightening people and working on education and prevention in that regard. Addressing this to anyone—maybe, Dr. Haaga, do you have statistics that point out that where education and family planning are available? Do you see a decrease in population and a decrease maybe in abortions?

Mention was made of the former Soviet Union, dealing a lot with Asia but also the former Soviet Union. And my understanding is that it is not unusual that a woman might have up to eight abortions as family planning because contraceptive services are inadequate or unavailable. So that we sometimes lose sight when people will, from a religious point of view or whatever it is, say we are against abortion completely, when they don't realize that family planning and education can prevent and reduce the number of abortions.

I wonder, do you have any statistics on that kind of situation, whether there is a correlation, and do you know about the numbers of abortions for family planning?

Mr. HAAGA. No. As Scott mentioned, they are trying in the latest round of the DHS to get more data on abortion. I have some experience from Malaysia and also from Bangladesh in trying to collect information on abortion, and it is very difficult and arouses a lot of opposition and antagonism, including among the people who are the potential users for the data, the local governments. There is—there is some information in Bangladesh—

Mr. SAWYER. Excuse me, you are talking about antagonism to the gathering of data?

Mr. HAAGA. Yes, yes, it is a politically charged act to try and collect the information even for scientific purposes. In several countries, you manage by not distinguishing between induced and spontaneous abortion.

But we estimated in Malaysia, for example, that even that was an undercount by about half. So that makes it very hard to look for any trends. It stands to reason that improved family planning

has got to be preventing unwanted pregnancies, but I am afraid that is about as strong a statement as I could make based on data.

In Bangladesh, menstrual regulation is legal and is a service provided by the Government, vacuum aspirated early abortions in the first trimester. And it was extremely common. We knew about 1 million a year, and it was particularly something being done in rural areas where the family planning services were weaker. There were probably a lot more than 1 million a year and probably second trimester abortions, too, in great numbers. And this was taken very much, including by the Government civil servants, as evidence of failures of the family planning program. And I think correctly.

So besides agreeing with the statement, I am afraid we don't have good methods of estimating the numbers of abortions in most of the developing countries. I think for the NIS countries, there are some pretty reasonable statistics and it is an appalling number.

Ms. BANISTER. Yes, and what that points out is that in the former Soviet Union and Eastern Europe, you have a long tradition of using abortion for birth control, rather than having good contraceptives. So there is an obvious recurring need for much better quality of care in family planning and much better choice of family planning methods in all those countries.

Mrs. MORELLA. Can I ask just one other brief question?

Mr. SAWYER. Sure.

Mrs. MORELLA. Thank you. I just want to ask you, what do you hope that the Cairo Conference is going to result in? What is going to be the benefit, the objective that will be reached by the Cairo Conference? Just from your own point of view—you don't have to represent any group in saying that, but as individuals who have been involved with the statistical compilation, with the objectives, the planning, and the hopes and aspirations—what do you think can be accomplished?

Mr. RADLOFF. I might mention what we have worked—we have witnessed over the last 20 years, since the Bucharest Conference, a real revolution in population policy in the developing world, where in the 1960's and early 1970's it was an exception for a country to have a policy that promoted access to family planning. Today, it is the exception for a country not to have such a policy. So I think as compared to past population conferences in Bucharest and Mexico City, we will see much greater consensus on the importance of dealing with population issues. And I think that will help galvanize support and mobilize resources for addressing those issues.

Ms. BANISTER. And also greater consensus has developed over time on the importance of sustainable development and the relationships between population and other economic and social changes. So that is agreed already, I think, and that will emerge more strongly agreed from Cairo.

Mr. HAAGA. I am impressed by the subtlety, and related usefulness of a lot of the discussion that has gone into the preparation, PrepComs, and the draft program of action. The old population explosion talk is not entirely outdated, but it was useful mainly for getting attention rather than guiding action. And a lot of what we are seeing now is much more interesting and much more scientific and for that reason probably more complicated discussions of popu-

lation-related problems and how they vary and what the appropriate actions are. And I think a lot of good would come of taking seriously that program of action.

Mrs. MORELLA. I thank you. I guess any time you can get all the number of countries who worked on the PrepComs and are working together with some common objectives, you will have some good results. I remember with the Earth summit, the sustainable development connection between the environment and population, there is a very volatile issue. And it is interesting that it is coming together now with education and health.

Thank you for the time, Mr. Chairman, Mr. Petri. I thank the panel.

Mr. SAWYER. Mr. Petri.

Mr. PETRI. Thank you. I just want to commend you, Mr. Chairman, for having this hearing. I think it is a very important subject, and to observe that I for some time felt that the international role of the—or potential, really, of the Census Bureau, has probably been given short shrift, and should be given greater support. We clearly have a national history in that area and it is of great importance to our country to help other countries develop good data about themselves and it benefits us in all kinds of ways to participate in that.

We have common standards that facilitate American business operating if we don't have to keep on translating things to strange terms we don't understand and massaging the data. So it helps in a lot of ways.

I guess I just wanted to ask a couple of questions. I will ask them together.

We are not the only people in the world who collect data or who have the ability to help other countries do that. The former colonial powers used to do a lot of that, probably still do, the British throughout what was the British Empire, and French and some others. I don't know if the Japanese are becoming more supportive and participating in this, but they clearly as an international trading power that is emphasizing nonmilitary economic assistance and help have a big stake in getting better data and having more understandable societies around the world.

So I am just curious to know if we are cooperating or competing or if we are just sort of playing caboose or what is going on? So if you could put this in some context for me, I would appreciate that.

And then, second, it seems to me that there is a big—that this sort of thing is very important for intelligence, not in the short term but basic information and data and understanding relationships between groups and some knowledge of how societies work and are organized. Clearly, it makes it very easy if we have some people that can speak the languages in Rwanda and understand the populations and the relationship of these groups; it is a lot easier to understand how to help or to deal with the situation or this, the south Sudan or who knows where in the world this is going to be happening.

So I am just curious if we are—do you sense that you are getting cooperation, at the sort of basic level from the CIA and National Security Council or other American or international intelligence or-

ganizations and kind of developing a database or helping to develop societal resources so we have the knowledge that we need to be effective in all kinds of places in the world?

Ms. BANISTER. Yes, on your first question about the other organizations around the world who are also engaged in statistical assistance of various kinds, we are in touch with most or all of them and we coordinate with them and help them. The needs are so great out there that there is no need to compete. I mean, for heaven's sake, you know, we are all struggling to get the job done. Everybody is too short of funds and lots of other resources that are needed. So we support one another. We help one another. We do not compete. We don't have the time to bother competing.

With the United Nations, which does a tremendous amount of international technical assistance, we try to launch joint efforts so as to not waste anybody's money and to not have different technical assistance teams coming in talking at cross-purposes. That is working very well and we are very proud of that. We think there should be more of that coordination among donors and technical assistance organizations, and we certainly work to coordinate with all the others. So there is no need to compete out here; there is too much need and too few people doing it.

With regard to the U.S. Government's need for intelligence and knowledge about all the countries of the world, the U.S. Census Bureau's international programs have the—it is our job, it is our duty, to serve the entire U.S. Government and indeed the U.S. population, anybody who asks, with information about every country of the world that we can get our hands on. I mean, we are trying to find out not only about the detailed aspects of the population of every country, but about its social and economic and environmental measures. So we do our very best to find out very much about many countries.

And we have as many languages on our staff as we can possibly manage. And we get requests for information, yes, from our intelligence agencies all the time, from our military agencies, from all of the departments of our Government, and we constantly—we drop everything and answer their questions. That is our job. It is very important that the U.S. Government have this international knowledge.

People often look at me and say, what has the U.S. Census got an international bureau for? That is not your job, you are supposed to be counting the U.S. population. Well, the answer is because our government needs this information, desperately and daily. So we are there giving it. That is our job. And we do, you know. People know where to call. You can tell, because of the requests for information we get, many, many, many times a day.

Mr. SAWYER. Thank you all very much. This is a collaborative effort, and I appreciate your interest and concern, because I think we all agree that it is an important arena and one that we need to give higher profile to across the country and throughout the world. Cairo has helped to do that, and perhaps this effort could help to contribute to the longer term informational infrastructure that we need to sustain policy changes. Thank you all for being here.

Ms. BANISTER. And we are very pleased that you are going to be at Cairo, and Mrs. Morella, representing us.

Mr. SAWYER. I am not sure I am. Mrs. Morella spoke with greater certainty than I have at this point. Thank you.

Our second panel this morning is made up of Dr. Shea Rutstein, Deputy Director, Demographic and Health Surveys; Dr. Charles Keely, Herzberg professor of international migration, georgetown university; and Dr. Ann Blanc, coordinator of demographic analysis, macro international.

Thank you all for being here. Again, the same conditions apply to you that apply to everyone else. The full text of your written testimony will be made part of the record, without objection. Dr. Rutstein.

**STATEMENTS OF SHEA O. RUTSTEIN, DEPUTY DIRECTOR, DEMOGRAPHIC AND HEALTH SURVEYS; CHARLES B. KEELY, HERZBERG PROFESSOR OF INTERNATIONAL MIGRATION, GEORGETOWN UNIVERSITY; ANN K. BLANC, COORDINATOR FOR DEMOGRAPHIC ANALYSIS, MACRO INTERNATIONAL**

Mr. RUTSTEIN. Mr. Chairman, members of the subcommittee, ladies and gentlemen, I would like to thank you for being given the opportunity to present my views here today.

Allow me to introduce myself. I am Shea Rutstein. I work for Macro International Inc., in the division that conducts the demographic and health surveys program and related projects. Within the context of the upcoming International Conference on Population and Development to be held next month at Cairo, I would like to present some remarks that pertain to gathering information in order to further the work and recommendations of that conference.

According to the United Nations, the world's population grew from two and a half billion people in 1950 to almost 5.7 billion people this year. During this year, close to 96 million people will be added to the globe, equivalent to the population of Mexico. In the less developed regions of the world, almost 90 million people will be added this year, to the over 4.4 billion there now.

The future population of the world depends primarily on future levels of fertility. Thirty-one years from now, that is, in the year 2025, the United Nations projects that the population will be between 7.9 billion and 9.1 billion, depending primarily on the course of decline in fertility levels. I have—if you would look in the testimony, I have prepared some figures, and this is in figure 1 of the testimony.

Thanks in large part to organized family planning programs, fertility levels have fallen around the world. As can be seen from the upper line in that graph, Figure 1, which represents what the population would have been had the growth rates of the 1960's been maintained, the ongoing decline of fertility has already had a substantial impact on the size of the global population.

The impact of the AIDS epidemic, while devastating in terms of lost human potential and family disruption, is likely to have small impact on the course of global population growth, according to estimations produced by the United Nations, the U.S. Bureau of the Census.

Originally, the rationale for government activities in the population field was that there are externalities and spillover effects of

population growth, that is that a couple's fertility decisions affects others beyond themselves. In the late 1950's and early 1960's, the concern led—that concern led to population and family planning activities that were based on removing barriers to modernization and economic development. Indeed, one study, led by then-President Johnson, led him to declare that less than \$5 invested in population goal is worth \$100 invested in economic growth.

In the middle 1960's, the absolute size of the population, rather than just its growth rate, were seen as the leading cause of environmental deterioration and increased scarcity of critical natural resources. There were limits—there were seen to be limits to the carrying capacity of the globe, leading to the formation of such groups as ZPG, or Zero Population Growth.

These environmental and development concerns are still valid today.

During the 1980's and 1990's, additional areas of concern have emerged that involve population-linked activities: Those that concern individual rights and well-being. It has been clearly shown that not only can fertility reduction affect health through macro level effects, but that there is a strong individual link between fertility behavior, particularly the length of time between births, and survival of children. Moreover, the risk of maternal mortality and morbidity is lessened with a reduction in the number of unwanted births that a mother has. The status of women and their need for high quality family planning services has also become an important area of concern that my colleague, Ann Blanc, will address.

Due to the increasing demand for family planning services, concerns also arose about the sustainability of programs, leading to studies of cost recovery schemes, efficiency, and equity.

What has been the role of family planning programs in reducing world population growth? Given low and decreasing mortality, decreasing the level of fertility is the most important factor in reducing population growth. There are four basic determinants of fertility levels: use of contraception; delayed entry into marriage and sexual unions; the period of infecundity following a birth due to breast feeding and post-birth abstinence; and induced abortions. As can be seen from figure 2 of the testimony, a nation's fertility rate is closely linked with its level of contraceptive use, accounting for about 80 percent of the variation in fertility levels between the less developed countries.

In many countries, family planning programs have been instrumental in increasing levels of contraceptive use to avoid unwanted births and bring down fertility. Indeed, among 40 less developed countries in a recent study of my own, the level of contraceptive use depended as much on the level of family planning effort as on the level of development as measured by a GNP per capita, which you can see in table 1 of the handout. Family planning programs not only increase geographic and economic access to contraception, but also increase psychological and social access by legitimizing its use and allowing couples to manifest their latent family size desires.

Two examples of success are Kenya and Bangladesh. As little as a decade ago, both were considered to be demographic basket cases. Recent survey information has shown that this premise was false.

In Kenya, the fertility has fallen from around 8 children per women to 5.4, and in Bangladesh the fall has been equally remarkable from about 6 children to less than 4, as shown in figure 3 of the handout.

National and international agencies, decisionmakers, and researchers have a critical need for high quality data on population growth and its determinants and consequences. They need information in order to develop policy strategies, to identify projects, to advocate solutions, and to build consensus. Data and statistics are also vital in monitoring the progress toward the goals of population programs and improving their effectiveness, efficiency, and responsiveness.

There are several types of statistical systems for collecting information on population and related activities. I have listed these in table 2. And I won't go into them here. However, in the absence of dependable conventional statistical systems, which are censuses and vital registration, the household sample survey is being relied upon to generate statistics and data needed for government policies and programs, and this was mentioned by Scott Radloff of USAID.

However, some subjects are very difficult to measure accurately, particularly if they are illegal or considered immoral or disdained by many, such as induced abortion in many countries. In table 3 of the handout, I list the best sources of information for each subject area, together with the likelihood of collecting good data along with comments about the sources.

There is a strong need to continue the comparative national level household survey programs, such as the demographic and health surveys. In the words of Reimert Ravenholt, former Director of USAID's Office of Population, they have put the red meat of information at the disposal of policymakers, program managers, and social scientists for their digestion. These surveys are the most cost-effective means to high quality statistics for policy process, the monitoring of world population growth and demographic trends, and evaluation of program activities. Indeed, it is the success of these statistical systems that has led to a great expansion in the range of information collected. Originally, surveys were used to measure fertility levels and determinants and child mortality. Today the scope of the surveys are expanded to include child and reproductive health, infant feeding and nutritional status of children and mothers, and other issues. Moreover, the information is needed for small and more detailed subnational areas.

One of the prime benefits of the international survey programs has been the ability to compare the status of one country against those of its peers, spurring action from country leaders who might not otherwise recognize the scope of their country's needs. The comparative report series of the demographic and health surveys is an example of how those comparable data can be used, and I have given a set of the comparative reports to the committee.

There are still many gaps in the information collected by the various systems today. More information is needed on STDs and HIV/AIDS. In particular, the number and types of sexual relationships is poorly known, as is use of condoms according to the type of relationship. The unmet need for contraception by adolescents is another area that needs more information for monitoring success of

programs, as are the fertility desires and motivations of men to use contraception. As mentioned earlier, perhaps the greatest lack of information is that on the incidence of abortion, a key proximate determinant of fertility, and hence population growth, and perhaps the most important factor in maternal mortality.

In order to meet the statistical needs created by the ICPD recommendations, the less developed countries will need to enhance their capability for collecting and analyzing data. Funding needs to be allocated to foster this enhancement through projects giving both theoretical knowledge and actual hands-on experience, as well as providing for technological transfers. While this enhanced capability is being built, technical assistance from the more developed countries, particularly the United States, which is the world leader in the provision of this type of assistance, will need to be provided for both data collection and analysis.

I conclude my testimony by quoting the Minister of Finance and Planning of Niger, Abdallah Boureima, who wrote the preface to the Niger Demographic and Health Survey Report. I quote, this is loosely translated:

The importance currently attached to population issues by the political and administrative authorities as well as by the general population in Niger, reinforces the interest in the various indicators provided in this report to principal users. Our conscience challenges us to make good use of the data contained in this report. Indeed, our country seems to have the worst indicators of health, infant and child mortality, and maternal mortality that has been observed since the beginning of this global survey program in 1984.

These results should push us to move rapidly to better this disastrous situation of the children and women of Niger. Wouldn't we have done something a long time ago had we had at our disposal these type of data and indicators? Have we given enough importance to the production and utilization of statistical information in our country?

These questions, among others, permit us in any case to draw the following lesson: The statistical sector is a vital sector in the process of designing and putting into practice development policies and programs; statistics should therefore be an indispensable instrument for decisionmaking in our country and should be used in good planning by all. The proof are the data of the Demographic and Health Survey of Niger, which reveal a dramatic health and nutrition situation and disquieting levels of infant and child and maternal mortality.

We therefore draw these conclusions. These results have awakened with a shock our national conscience about the importance and usefulness of statistics and of the need to act upon them in our policies and programs for development.

I would like to thank you, Mr. Chairman, and the other members of this committee, for allowing me to testify before you today.

Mr. SAWYER. Thank you very much. Your timing was almost right on the button.

[The prepared statement of Mr. Rutstein follows:]

PREPARED STATEMENT OF SHEA O. RUTSTEIN, DEPUTY DIRECTOR, DEMOGRAPHIC AND  
HEALTH SURVEYS**Personal Introduction**

Mister Chairman, members of the subcommittee, ladies and gentlemen, I would like to thank you for being given the opportunity to present my views here today. Allow me to introduce myself. I am Shea Rutstein and I work for Macro International, Inc. in the division that conducts the Demographic and Health Surveys program and related projects. Within the context of the upcoming International Conference on Population and Development to be held next month in Cairo, I would like to present some remarks that pertain to gathering information in order to further the work and recommendations of that conference.

**World Population Growth Trends**

According to the United Nations, the world's population grew from two and a half billion people in 1950 to almost 5.7 billion people this year. During the year close to 96 million people will be added to the globe, equivalent to the population of Mexico, an annual increase of 1.7 percent, compounded continuously. In the less developed regions of the world, almost 90 million people will be added this year to the over 4.4 billion there now.

The future population of the world depends primarily on future levels of fertility. Thirty-one years from now, that is, the year 2025, the U.N. projects that the population will be between 7.9 billion and 9.1 billion, depending primarily on the course of decline in fertility levels. This is shown in Figure 1 of the handout.

Thanks in large part to organized family planning programs, fertility levels have fallen around the world. As can be seen from the upper line in the graph, which represents what the population would have been had the growth rates of the 1960s been maintained, the ongoing decline in fertility has already had a substantial impact on the size of the global population.

The impact of the AIDS epidemic, while devastating in terms of lost human potential and family disruption, is likely to have little impact on the course of global population growth, according to estimations produced by the United Nations and the US Bureau of the Census.

#### **Evolving Areas of Population Concern**

Originally, the rationale for government activities in the population field was that there are externalities and spill-over effects of population growth, that is that a couple's fertility decisions affects others. In the late 1950s and early 1960s, the concern that led to population and family planning activities was based on removing barriers to modernization and economic development. This concern centered around the rate of population growth, which had increased

in the less developed countries, particularly after World War II, as death rates fell and fertility rates did not. The rate of growth of the population was seen as detrimental especially in the areas of education, job creation, and provision of food. Moreover, the age structure of the population, due in large part to high fertility levels, produced high dependency ratios (the ratio of number of people in the "dependent" ages, under 15 years and 65 and over, to the number in the "productive" ages of 15 to 64 years). High dependency ratios were linked to low national rates of saving needed for capitalization. Indeed, one study led then President Johnson to declare that "less than \$5 invested in population control is worth \$100 invested in economic growth".

In the middle 1960s, the absolute size of the population, rather than just its growth rate, was seen as a leading cause of environmental deterioration and increased scarcity of critical natural resources. There were seen to be limits to the carrying capacity of the globe, leading to the formation of groups such as ZPG (Zero Population Growth).

These environmental and development concerns are still valid today.

During the 1980s and 1990s additional areas of concern have emerged that involve population-linked activities: those of individual rights and well-being. It has been clearly shown that not only can fertility reduction affect health through the macro level effects of increased development and increased access to health facilities, but that there is a strong individual link between fertility behavior, particularly the length of time between births, and survival of

children. Moreover, the risk of maternal mortality and morbidity is lessened with a reduction in the number of unwanted births that a mother has. The status of women and their need for high quality family planning services has also become an important area of concern that my colleague, Ann Blanc, will address.

Due to the increasing demand for family planning services, concerns also arose about the sustainability of programs, leading to studies of cost-recovery schemes, efficiency, and equity.

#### **The role of family planning programs in reducing world population growth**

What has been the role of family planning programs in reducing world population growth? Given low and decreasing mortality, decreasing the level of fertility is the most important factor in reducing population growth. There are four basic determinants of fertility levels: use of contraception, delayed entry into marriage and sexual unions, the period of infecundity following a birth due to breastfeeding and postbirth abstinence, and induced abortions. As can be easily seen from Figure 2 in the handout, a nation's fertility rate is closely linked with its level of contraceptive use, accounting for about 80% of the variation of fertility levels between the less developed countries.

In many countries family planning programs have been instrumental in increasing levels of contraceptive use to avoid unwanted births and to bring down fertility. Indeed, among forty

less developed countries in a recent study of my own, the level of contraceptive use depended as much on the level of family planning effort as on the level of development as measured by GNP per capita. Table 1 in the handout. Family planning programs not only increase geographic and economic access to contraception, but also increase psychological and social access by legitimizing its use and allowing couples to manifest their latent family size desires.

Two examples of success are Kenya and Bangladesh. As little as a decade ago, both were considered to be demographic "basket cases": very poor countries with high fertility levels with little possibility of decline. Recent survey information has shown that this premise was false. In Kenya fertility has fallen from around 8 children per woman to 5.4, and in Bangladesh the fall has been equally remarkable, from around six children per woman to less than four, as shown in Figure 3 of the handout. In spite of still being among the poorest, women's education has increased dramatically while infant and child mortality has fallen equally dramatically; these countries are well on their way in their "Reproductive Revolution". Indeed, the results are so startling that the World Bank is calling for substantial additional funding for family planning in both countries.

### **The Need for data**

National and international agencies, decision-makers, and researchers have a critical need for high quality data on population growth and its determinants and consequences. They need information in order to develop policy strategies, to identify problems, to advocate solutions, and

to build consensus. Data and statistics are also vital in monitoring the progress towards the goals of population programs and in improving their effectiveness, efficiency, and responsiveness.

In order to properly address the population concerns I have outlined, data need to be collected on several areas that determine world population growth. They are the size of the population and its structure; the level of fertility and the levels of its proximate determinants: contraceptive use, abortion, marriage and postpartum infecundity; the level of mortality, particularly infant and child mortality and maternal mortality and its determinants: morbidity, nutritional status and health care; and the amount and rates of migration, both internal and international and given the increasing levels of political disruption and turmoil, the situation of refugees.

### **Demographic Statistical Systems**

There are several types of statistical systems for collecting information on population and related activities. The most common are listed in Table 2. The national census is the oldest and still cannot be replaced for measuring the size of the population. Vital registration systems in the developed world are regularly used to calculate fertility, mortality and marriage statistics, but are so lacking in coverage in most developing countries that they cannot be counted upon to give credible estimates of vital rates.

In the absence of dependable conventional statistical systems, the household sample survey is being relied upon to generate the statistics and data needed for government policies and programs. Beginning in 1972 with the World Fertility Survey program and later with the Contraceptive Prevalence Surveys and continuing today with the Demographic and Health Survey program conducted by Macro International, the United States Agency for International Development--USAID--has established a statistical system that provides reliable and internationally comparable data for most of the statistics needed to address the concerns I have listed.

Other data collection activities can supplement the information provided by censuses and household surveys. They include ad hoc and longitudinal surveys, sentinel sites and sample registration areas, service provider statistics and small group studies, such as focus groups and ethnographic studies.

No statistical system is free from problems. Unless carefully monitored, survey data are subject to omission of respondents and events and misstatement of facts.

Some subjects are very difficult to measure accurately, particularly if they are illegal or considered immoral or disdained by many, such as induced abortion in many countries. In Table 3 of the handout, I list the best sources of information for each subject area, together with the likelihood of collecting good data along with comments about the sources.

### Future Statistical Needs and Recommendations

There is a strong need to continue the comparative national-level household survey programs, such as the Demographic and Health Surveys. In the words of Reimert Ravenholt, former director of USAID's Office of Population, they have put the "red meat" of information at the disposal of policy makers, program managers and social scientists for their digestion. These surveys are the most cost-effective means to high quality statistics for the policy process, the monitoring of world population growth and demographic trends, and evaluation of program activities. Indeed, it is the success of these statistical systems that has led to a great expansion in the range of information collected. Originally the surveys were used to measure fertility levels and determinants and childhood mortality; today the scope of the surveys has expanded to include child and reproductive health care, infant feeding and nutritional status of children and mothers, and other issues. Moreover, the information is needed for smaller and more detailed subnational areas.

One of the prime benefits of the international survey programs has been the ability to compare the status of one country against those of its peers, spurring action from country leaders who might not otherwise have recognized the scope of their country's needs. The Comparative Report series of the Demographic and Health Surveys is an example of how these comparable data can be used.

There are still many gaps in the information collected by the various systems today. More information is needed for on STDs and HIV/AIDS. In particular, the number and types of sexual relationships is poorly known, as is the use of condoms according to the type of relationship. The unmet need for contraception by adolescents is another area that needs more information for monitoring success of programs as are the fertility desires and motivations of men to use contraception. In addition, more work needs to be done combining the results of the various systems, for example to produce small area estimates and to calibrate service statistics of family planning programs. The combination of financial data together with coverage data would allow tracking of program efficiency. And as mentioned earlier, perhaps the greatest lack of information is that on the incidence of abortion, a key proximate determinant of fertility, and hence population growth, and perhaps the most important factor in maternal mortality.

While extremely beneficial, the new demands for information have placed a great burden on both interviewers and respondents as questionnaires become longer, interviews more complex, and the number of interviews has expanded dramatically. A good solution to the demands of expanded surveys while maintaining high quality results appears separating the interview into two parts carried out by separate interviewers. This solution, while very cost-effective, will require additional funding both for field operations and for data processing and analysis.

In order to meet the statistical needs created by the ICPD recommendations, the less developed countries will need to enhance their capabilities for collecting and analyzing data.

Funding needs to be allocated to foster this enhancement through projects giving both theoretical knowledge and actual hands-on experience, as well as providing for technological transfers. While this enhanced capability is being built, technical assistance from the more developed countries, particularly the United States, which is the world leader in provision of this type of assistance, will need to be provided for both data collection and analysis.

## Conclusion

I conclude my testimony by quoting the Minister of Finance and Planning of Niger, Abdallah Boureima who wrote the preface to the Niger Demographic and Health Survey Report.

"The importance currently attached to population issues by the political and administrative authorities as well as by the general population of Niger, reinforces the interest in the various indicators provided in this report to principal users. Our conscience challenges us to make good use of the data contained in this report. Indeed, our country seems to have the worst indicators of health, infant and child mortality and maternal mortality that have been observed since the beginning of this global survey program in 1985.

"These results should push us to move rapidly to better this disastrous situation of the children and women of Niger. Wouldn't we have done something a long time ago had we regularly had at our disposal these type of data and indicators? Have we given enough importance to the production and utilization of statistical information in our country?

"These questions, among others, permit us in any case to draw the following lesson: the statistical sector is a vital sector in the process of designing and putting into practice development policies and programs: statistics should therefore become an indispensable instrument for decision making in our country and should be used in good planning by all. The proof are the data of the Demographic and Health Survey of Niger, which reveal a dramatic health and nutrition situation and disquieting levels of infant and child and maternal mortality.

"We therefore draw these conclusions. These results have awakened with a shock our national conscience about the importance and usefulness of statistics and of the need to act upon them in our policies and programs for development."

I would like to thank you, Mr. Chairman, and the other members of this committee for allowing me to testify before you today.

Table 1.

**Effect of Family Planning Programs on Fertility**

$$TFR = 7.01 - 0.06 CPR \quad R^2 = 0.81$$

(12.89)

Beta Coefficient:  
CPR = -0.902

$$CPR = -11.15 + 0.016 Y/P + 0.640 EFF \quad R^2 = 0.57$$

(4.30) (4.12)

Beta Coefficients:  
Y/P = 0.483  
EFF = 0.478

No. of Observations = 40 less developed countries

TFR = Total Fertility Rate

CPR = Contraceptive Prevalence Rate

Y/P = GNP per Capita

EFF = Family Planning Program Effort Score

Numbers in parentheses are t-ratios of the coefficients.

Table 2.

**Demographic Data Collection Systems**

Censuses

Vital Registration

Comparative household survey programs:

- USAID: Demographic and Health Surveys (DHS)
- World Bank: Living Standard Measurement Surveys (LSMS)
- WHO surveys: Expanded Program of Immunization (EPI), Control of Diarrheal Disease (CDD)

Ad-hoc surveys

Prospective, multi-round and longitudinal surveys

Service statistics

Facilities Surveys and Situation Analysis

Sentinel sites, sample registration areas

Small group studies:

- Anthropological studies
- focus groups

Table 3.

## Information Needed and Best Sources

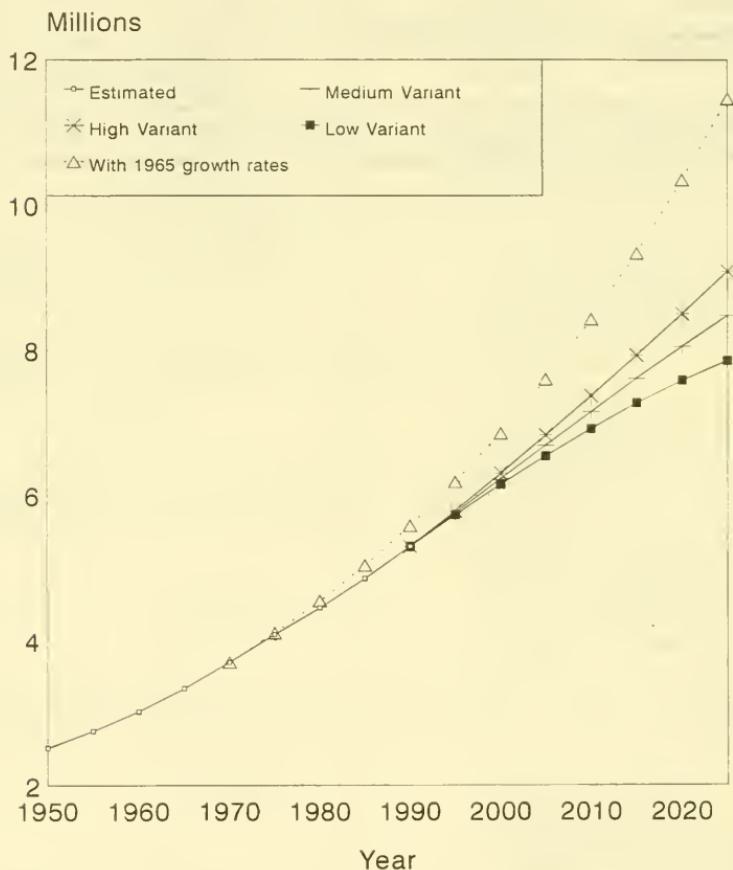
Information Needed for ICPD recommendations	Best sources	Likelihood of good quality data	Comments
Population size and distribution	Census	Good	
Population characteristics - Age structure - Education level and attendance - Household composition - Income and employment	Census, household surveys	Good	Censuses provide basic information for small areas. Surveys provide more detailed information for larger areas.
Fertility Rates	Surveys, vital registration in very few countries	Good for most household surveys  Poor for most vital registration	Surveys provide both numerators and denominators of rates  Vital registration provides only numerators. Denominators must be estimated from census.
Fertility Determinants:			
- Contraceptive Prevalence	Household surveys	Good	Numerators and denominators
	Service provider statistics	Fair to poor	Numerators only and only for organized services
- Proportion Married	Census, household surveys	Good	Census may only provide information on formal marriages
- Postpartum Infecundity	Household surveys	Good	
- Induced Abortion	Service statistics, surveys	Poor	In very few countries will service statistics provide reasonable estimates
Fertility Preferences - No. of children - Pct who want no more - Unmet need for contraception	Household surveys	Good	
Mortality rates:			
- Infant and child	Household surveys Vital registration in a few countries	Good	Vital registration subject to large amounts of omission in most countries
- Adult mortality	Vital registration	Fair	Provides numerators only. Quality of vital statistics may be quite poor in many countries. Indirect estimates can be obtained from some surveys and censuses.
- Maternal mortality	Surveys, vital registration	Fair to poor	Many maternal deaths are abortion-linked and statistics are subject to large amounts of omission.

Information Needed for ICPD recommendations	Best sources	Likelihood of good quality data	Comments
<b>Health status</b>			
- Reproductive Health	<p>Maternity Care: Surveys for prenatal and delivery care</p> <p>Service statistics and vital statistics for delivery care</p> <p>Obstetric complications and sequelae: Surveys and service statistics</p> <p>Sexually Transmitted Diseases: Notifiable Disease Reporting Systems</p>	<p>Good</p> <p>Fair to poor</p> <p>Fair</p> <p>Poor</p>	<p>Many vital registration systems and service statistics omit a large portion of births</p> <p>Omission of many births and pregnancies in service statistics; fair self-reporting in household surveys</p> <p>Many reporting systems do not work well; reluctance to disclose STDs</p>
- Childhood Morbidity and Treatment - Immunization	Household surveys, Special one topic surveys, Service statistics	Fair	Difficult to estimate prevalence from surveys due to seasonality; some diseases not easy to identify (e.g. malaria) or to measure severity. Service statistics miss untreated cases
Nutritional Status - Children - Women	Household surveys	Good	<p>Through anthropometric measurements</p> <p>Currently only mothers of young children are measured; there is a need for measuring adolescents and women of reproductive age</p>
<b>Migration:</b>			
- Internal	Census, surveys	Good	Censuses can provide information on directional flows; only large divisions can be covered by surveys
- International	Census, surveys, border crossing statistics	Fair	Illegal immigration very hard to cover by any system; outmigration much more difficult to estimate than immigration
- Refugees	Special ad-hoc surveys	Fair	
<b>Program performance</b>			
- coverage - access	Household surveys, provider statistics, specialized surveys	Fair	Household surveys may not provide enough cases for small or regional providers. Provider statistics give only numerators and may give information only on services provided (such as number of immunizations) rather than number of clients served.
- quality	Client surveys, facility surveys, observation	Fair to Poor	

Information Needed for ICPD recommendations	Best sources	Likelihood of good quality data	Comments
<b>Special Topics and Groups:</b>			
Gender Equity	Combination of Sources, principally censuses and surveys	Good	
Adolescents	Household surveys Special household surveys	Fair to good	
STD High Risk Population	Service statistics and medical records	Poor	Numerators only are provided; difficult to assess size of population at high risk
Domestic Violence	Special modules for household surveys	Fair to poor	Reporting will vary between cultures

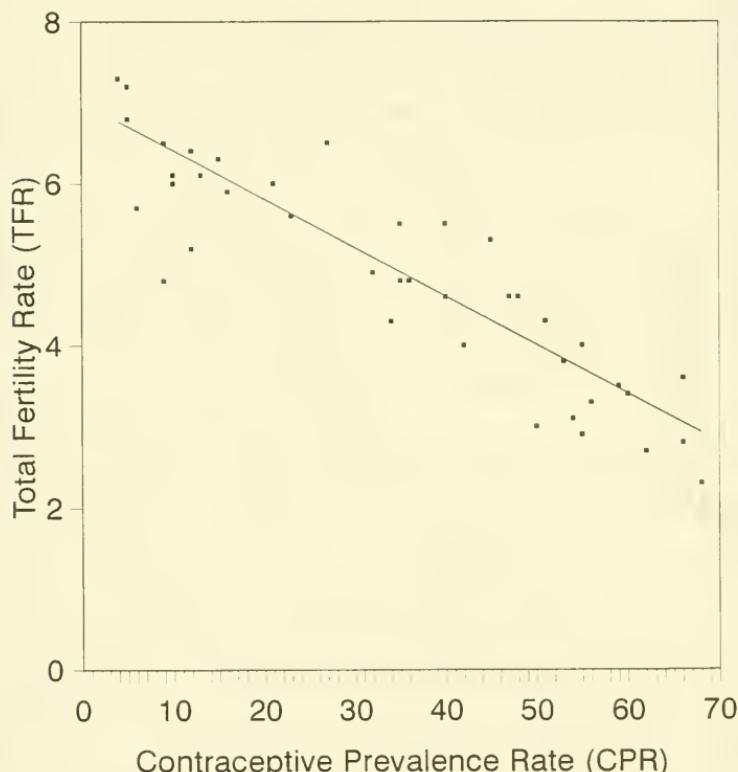
# Figure 1

## World Population Growth



United Nations, 1992

Figure 2  
The Impact of Contraception on Fertility  
in Forty Less Developed Countries



CPR is the percent of married women using contraception.

TFR is the average number of births per woman at current rates.

Figure 3  
Trend in TFR from Various Sources  
Bangladesh



Mr. SAWYER. Dr. Keely.

Mr. KEELY. Thank you, Mr. Chairman. My name is Charles Keely. I am the Herzberg Professor of International Migration and professor of demography at Georgetown University.

I would first like to apologize, Mr. Chairman, because of scheduling conflicts that I was not able to submit prepared testimony.

Mr. SAWYER. It happens.

Mr. KEELY. There are about 100 million international migrants in the world representing 2 percent of the Earth's population. They are unevenly distributed over the globe, in terms of both origin and destination. Some 35 to 40 million international migrants are in sub-Saharan Africa; another 15 million or so in Asia and the Middle East; about 6 million in Latin America; and between 13 to 15 million each in Europe and in North America.

Most international migration is intraregional; that is, we will find, for instance, Africans are usually in Africa, Asians in Asia for the most part. Despite much talk of south to north migration potential, most migration is south to south, within broadly defined geographical regions. These migrants include refugees and asylum seekers, the highly skilled management and research workers moving among developed countries, skilled and unskilled temporary and seasonal workers, and the classic immigrant or settlers that we are used to in the United States.

Some have all the proper documents. In some cases the issue of documents is a formal legalism with little or no importance in the real world. Nobody is checking documents in Goma, for example.

Our knowledge of the number and characteristics of international migrants is based to a large extent on estimates. Whether a person is a migrant and what kind of a migrant she or he is legally often depends on intentions and intentions can change. Sometimes, literally as a matter of life and death, intentions need to be kept hidden. But in addition, countries keep statistics on border crossers and entrants according to their own national needs and laws.

Comparability on the simplest of matters is exceedingly difficult to attain. The U.N. Statistical Commission has published criteria for data collection and reporting, but few countries adhere to them. The United States, for example, does not follow the U.N. recommended guidelines, preferring rather to collect and report statistics that reflect U.S. legal categories for the sake of law enforcement and for reporting to Congress, which wants to know the effects of its laws and its categories.

Although 2 percent is a small proportion of the world's population, international migration can create major political and economic problems for sending and receiving countries, and for the community of states in general. One need only to think of recent events surrounding Rwandan refugee movements to understand that a small percentage of the world's population can be a large, absolute number and can involve totally unacceptable suffering and death. Or closer to home, consider the impact of another Mariel boatlift of 125,000 people to Florida. Has not the policy of Haitian interdiction on the high seas something to do with the prevention of another Mariel-type incident?

Refugee flows will most likely continue, as long as the nation state is the fundamental building block of the international com-

munity. The potential for civil war, attempts at territorial secession, demands for self-determination, calls for irredentist expansion to borders of some presumed original homeland exists on every continent.

The international community is based on an expectation that borders are normally firm. We need to return to that state of affairs. But there is another source of refugee potential that already has shown itself. The potential of civil war, with clear protagonists on each side, each with their international supporters, is bad enough. Far more disruptive is the current spate of countries that are a name on a map with virtually no institutional capacity to run as a society. These are countries with no state, no government, no justice, a crumbling infrastructure, virtually no ability to deliver education, health or basic social services, primitive internal markets, and virtually no international economic activity. I will not dwell on the implications for timely and accurate statistical data in such a case.

Think of Somalia, Liberia, Afghanistan, Haiti, and now Rwanda. It is ironic to think that Goma, the home to hundreds of thousands of Rwandans, is in Zaire, a prime candidate for the next chaotic collapse for state capacity.

I might add here, Mr. Chairman, that in the question earlier to the previous panel concerning early warning, I would suspect that demographic data are not what we need for early warning. But if we look, for example, at the decline of infrastructure, usable roads, decline in education, decline in customs collections, these might be a better indicator of a total collapse of state capacity than looking at demographic statistics.

Mr. SAWYER. As long as you are going to interrupt, let me just ask you, I wouldn't disagree at all with those as indicators. It seems to me, however, that there are demographic factors that could weigh in that kind of instability. For example, the coming together of older indigenous populations and younger mobile, less affluent populations, particularly where there are substantial cultural, ethnic or historic differences among them. That involves a set of demographic measurements that could have explosive consequences that, while they may not be predictive of the absolute moment, they certainly are predictive of conditions that led to that sort of thing.

Mr. KEELY. I would certainly agree. I think we have underestimated the strength of nationalism and its persistence through time. And it is only since 1989, if I can use the 1989 as a kind of a base date, that we have realized that nationalism is far from dead. One can look at that whole issue.

Mr. SAWYER. I guess I was thinking more in terms of south central Los Angeles, in describing those sets of conditions, that in fact led to a competition.

Mr. KEELY. Well, on the other hand, Mr. Chairman, if one looked at a similar set of conditions in New York City in 1910, one would have said New York City was going to blow, and that the United States had absolutely no capacity to absorb the Italians, the Poles, Jews, and East Europeans that were coming in at that time. It is not all that clear what the capacity of any society is to absorb ethnic differences.

Mr. SAWYER. I think that is right. I mean I don't mean to be absolutist about it. Only that, as you pile a cone of sand, there comes a point where that cone collapses and begins to rebuild again. But I am not sure that any of us can predict with certainty where that point comes.

Mr. KEELY. Since I am a New Yorker, Mr. Chairman, and not a Californian, I have a different view of that history.

Mr. SAWYER. Please continue.

Mr. KEELY. Thank you, sir. The new international economic—excuse me. The new international order that we sometimes hear about may require attention to all those collapsing states, many of them that have become dependent on external aid that was part of the cold war competition between the U.S.S.R. and the West. They may reveal one by one that they are in fact empty shells, empty shells in the sense of being modern states in any but the most nominal sense.

I am reminded, Mr. Chairman, of the story about Catherine the Great going through Russia, preceded by Count Potemkin, her minister and favorite, who erected villages, basically facades of houses. The state system as we know it is to a large extent a Potemkin village. There are names on a map with no capacity. Until we accept that and think about what the implications of that are for international obligations, I think the concept of building a new international order is going to miss the mark. And our efforts at development are going to miss the mark if there is nothing there. It is good money after bad.

Beyond refugees, there are other international migration trends that deserve attention. Although they may seem to be threatening to some, they are also signs of international vigor which, nevertheless, challenge old ways of thinking. Most important is the recent emergence between developed economies of exchange of highly educated and highly skilled people who are not immigrants in the usual sense, but who nevertheless are permitted to live and work legally in foreign countries for years, with no intention of renouncing their cultural or political allegiance. Think of Americans working on joint ventures in Europe or the Middle East, Japanese executives in the United States, people in marketing and management training in global firms that spend part of their working lives abroad.

High-technology research and development in firms and research universities almost always involve an international staff, no matter where the work happens to be done. Europeans, Americans, Japanese, and many others are part of a large and growing component of a globalized labor force. The United States now admits as many high-level workers to live and work in the United States for a year or more on nonimmigrant visas as it does through permanent immigration visas. This phenomenon is not unique to this country. It is a feature of modern advanced economies and of those aspiring to that status.

The trend was not intended or anticipated in immigration laws. Nevertheless, it is taking place, and lawyers are fashioning ways under current laws to accommodate a requirement of a global economy; namely, a global labor market for skills and experiences that

are in great demand to take advantage of expanding markets and new product development.

International migration, then, is modest in relation to total world population, but it includes a formidable number of people. International migration, especially in the form of refugee movements, can provide acute challenges that require tremendous resources and exact large political prices to address. But migration can also be a harbinger of positive change, of economic growth requiring adjustment of labor force recruitment, and the forging of bonds and networks that can be bulwarks against future aggression between economic partners.

International migration also presents challenges, even when it signals positive change. In the context of the International Conference on Population and Development to be held in Cairo, international migration will probably be a marginal topic, as it has been in previous international population conferences. That does not mean that there is complete agreement on the issues among governments. Unlike reproductive health, international migration is less easily addressed by concrete programs. I suspect that in the discussions and agreements and disagreements over fertility issues, international migration will be left to other forums to deal with.

Currently, much of the diplomatic discussion and negotiation about migration is, in fact, carried out within regional mechanisms and organizations. Even in the refugee field, many initiatives are handled apart from the U.N. system, despite the fact that the U.N. High Commissioner is central to providing protection and channeling international assistance in many refugee crises around the world.

Beyond Cairo, there are many reasons to focus on migration trends, to try to divine what they portend, what prices they may exact, and what opportunities and benefits they may bring. In this country, that usually means that we focus on immigration only. On that, we wax hot and cold. The Americans are in a pretty negative mood about immigration right now, both because of what is portrayed as problems at home and the costs overseas. Perhaps we need to look beyond the immediate situation and take a broader and longer view, but that, of course, will wait until after Cairo.

Thank you, Mr. Chairman.

Mr. SAWYER. Thank you, Dr. Keely.

[The prepared statement of Mr. Keely follows:]

PREPARED STATEMENT OF CHARLES B. KEELY, HERZBERG PROFESSOR OF  
INTERNATIONAL MIGRATION, GEORGETOWN UNIVERSITY

There are about 100 million international migrants in the world, representing 2 percent of the earth's population. They are unevenly distributed over the globe, in terms of both origin and destination.

+Some 35 to 40 million international migrants are in Sub-Saharan Africa.

+About 15 million are in Asia and the Middle East.

+About 6 million are in Latin America.

+Between 13 to 15 million each are in Europe and North America.

Most international migration is intraregional. Africans are usually in Africa and Asians in Asia. Despite much talk of South-to-North migration potential, most migration is South-to-South, within broadly defined geographic regions. These migrants include refugees, asylum seekers, the highly skilled management and research workers moving among developed countries, skilled and unskilled temporary and seasonal workers, and settlers. Some have all the proper documents. In some cases the issue of documents is a formal legalism, with little or no importance in the real world.

Our knowledge of the number and characteristics of international migrants is based to a large extent on estimates. Whether and what kind of a migrant a person is legally often depends on intentions and intentions change and sometimes, literally as matters of life and death, need to be kept hidden. In addition, countries keep statistics on border crossers and entrants according to their own national needs and laws. Comparability on the simplest of matters is exceedingly difficult to attain. The UN Statistical Commission has published criteria for statistical collection and reporting but few countries adhere to them. The United States, for example, does not follow UN recommended guidelines, preferring rather to collect and report statistics that reflect US legal categories for the sake of law enforcement and reporting to Congress on the effects of policy categories that the US has established.

Although 2 percent of the world's population is small, international migration can create major political and economic problems for sending and receiving countries, and the community of states in general. One need only to think of recent events surrounding Rwandan refugee movements to understand that a small percentage of the world's population can be a large, absolute number and involve totally unacceptable suffering and death. Or closer to home, consider the impact of another Mariel boatlift of 125,000 people to Florida. Has not the policy of Haitian interdiction on the high seas something to do with the prevention of another Mariel-type incident?

Refugee flows will most likely continue as long as the nation state is the fundamental building block of the international community. The potential for civil war, attempts at territorial secession, demands for self-determination, calls for irredentist expansion of borders to some presumed original homeland exists on every continent. The need to return to a set of international expectations that borders are normally firm is sorely needed.

But there is another source of refugee potential that already has shown itself. The potential of civil war, with clear protagonists and even their international supporters, is bad enough. Far more disruptive is the current spate of countries that are a name on the map with virtually no institutional capacity to run as a society. These are countries with no state - no government, no justice, a crumbling infrastructure, virtually no ability to deliver education, health or basic social services, primitive internal markets and virtually no international economic activity. Think of Somalia, Liberia, Afghanistan, Haiti and now Rwanda. It is ironic to think that Goma, the home to hundreds of thousands of Rwandans, is in Zaire, a prime candidate for the next chaotic collapse of state capacity. The new international order may require attention to all those states, many of them dependent on the external aid that was part of Cold-War competition between the USSR and the West, that will one by one reveal what empty shells they are in terms of being modern states in any but the most nominal sense.

Beyond refugees, there are other international migration trends that deserve attention. Although they may seem threatening to some, they are signs of international vigor, which nevertheless challenge old ways of thinking. Most important is the recent emergence between developed economies of highly educated and highly skilled people who are not immigrants in the usual sense but who nevertheless are permitted to live and work in foreign countries for years with no intention of renouncing their cultural or political allegiance. Think of Americans working on joint ventures in Europe or the Middle East, Japanese executives in the US, people in marketing or management training in global firms that spend part of their working lives abroad. Europeans, Americans, Japanese, and many others are part of a large and growing component of globalization. The United States now admits as many high level workers to live and work in the US for a year or more (and often for many years) as it does through permanent immigration visas.

This phenomenon is not unique to the United States. It is a feature of modern, advanced economies and of those aspiring to that status. The trend was not intended or anticipated in immigration laws. Nevertheless it is taking place and lawyers are fashioning ways under current laws to accommodate a requirement of a global economy, namely a global labor market for skills and experiences that are in great demand to take advantage of expanding markets and new product development.

International migration, then, is modest in relation to total world population, but it includes a formidable number of people. International migration, especially in the form of refugee movements, can provide acute challenges that require tremendous resources and exact large political prices to address. But migration can also be a harbinger of positive change, of economic growth requiring adjustment of labor force recruitment and forging of bonds and networks that can be bulwarks against future aggression between economic partners.

International migration always presents challenges, even when it signals positive change. In the context of the International Conference on Population and Development (ICPD) to be held in Cairo, international migration will probably be a marginal topic, as it has been in previous international population conferences. That does not mean there is complete agreement on the issue among governments. International migration is less easily addressed by concrete programs, as is true in reproductive health. I suspect that in the discussions and disagreements over fertility, international migration will be left to other forums to deal with. Currently, much of the diplomatic discussion and negotiation about migration carried out within regional mechanisms and organizations. Even in the refugee field, many initiatives are handled apart from the UN system, even though the UN High Commissioner is central to providing protection and channeling international assistance in many refugee crises around the world.

Beyond Cairo, there are many reasons to focus on migration trends, to try to divine what they portend, what they may exact and what opportunities and benefits they may bring. In this country, we usually do not do that very well in a global context. International migration for us usually means immigration. On that we wax hot and cold. We Americans are in a pretty negative mood about immigration right now, both because of what is portrayed as problems at home and costs overseas. Perhaps we need to look beyond the immediate situation and take a broader and longer view. That, of course, will have to wait for after Cairo.

Mr. SAWYER. Dr. Blanc.

Ms. BLANC. Thank you. My name is Ann Blanc. I am the Coordinator for Demographic Analysis at the DHS Program. This statement today has been prepared in collaboration with Dr. Cynthia Lloyd of the Population Council. We have been asked to give our views on future data needs for women to the subcommittee and we are pleased to have the opportunity to do so.

First, I would like to address the question, what do we know about women's lives? For numerous countries and for several points in time, we know in some detail about various aspects of the lives of women and girls that have an effect on population change. For example, we know how many children women have, we know how many children women say they want, and we know how many women are using contraception. Internationally comparable data are also available on some aspects of the health of girls and women.

In recent years, as you have heard, there has been a particular focus on efforts to collect information on women's reproductive health. Again, to give a few examples, we know how many women have medical assistance during delivery of a child, we know how many women get prenatal care during pregnancy, and we know how many girls die before reaching age five.

Data on women's education and labor force participation are also available by country and over time. Much of this information is compiled by the United Nations and other international agencies. Differences between men and women in their roles and responsibilities have made women's economic activities particularly difficult to record and measure accurately. Nevertheless, we are able to document the main features of women's schooling levels and their economic activities.

What do we know about the relationship between women's social and economic condition and demographic behavior? Recent reviews which have summarized a large number of studies on this topic have found that one aspect of women's status, their education, is consistently negatively related to their fertility and to child mortality and positively related to life expectancy, and importantly, that that relationship is enhanced when there is greater equality between the sexes in schooling. Other studies have documented that diversity of relationships between the type of work women do and their fertility, with participation in the modern sector of the labor force more likely to be negatively related to fertility in countries that have reached a moderate to high level of development.

Well, how have we learned what we know about women's lives?

Much of what we know about women's lives as they relate to population and socioeconomic development is derived from sample survey data, such as the DHS Program. A large number of surveys have been conducted in both developed and developing countries. In the developing world, these are usually nationally representative surveys which entail person-to-person interviews conducted in households. These surveys are usually carried out by governmental agencies of the countries in which they are conducted, often with technical assistance and funding provided by outside donors such as USAID, the United Nations, or the World Bank.

When the primary objective of these surveys is the enumeration of demographic events such as births and child deaths, the individual woman is usually the survey respondent. When the primary objective of data collection is to provide broader social and economic data, the survey respondent is usually the head of the household. When households are described by their overall levels of income or consumption or by their amenities, the underlying assumption is that the household is a cohesive social and economic unit within which resources are shared.

As I will describe in a moment, we find this approach problematic because the welfare of the head of the household is used as a proxy for the welfare of all of the household members. As the ICPD approaches, we have become increasingly aware of two significant issues. First, that there continue to be many aspects of the lives of individual women about which we have inadequate information. And second, there are many ways that women's situation is tied up with their family responsibilities and living arrangements. And I would like to speak about each of these in turn.

A significant theme of the ICPD conference will be that family planning and health programs need to be designed to take account of a broad range of women's needs. This implies that we need to understand women's experiences more fully. We have identified three crucial areas in which we believe that data on the lives of individual women are seriously lacking: the management of unwanted pregnancy, other aspects of reproductive health, and the obstacles to contraceptive use for women who want to stop childbearing or to delay their next birth.

Internationally comparable data of good quality on how women manage unwanted pregnancy, including the prevalence of abortion, are simply unavailable. If we knew more about the prevalence of abortion and the women who use it, we would not only understand fertility change better, but would also be able to redirect resources to meet these women's needs more fully.

Within the area of women's reproductive health, simple documentation of the prevalence of many conditions is not universally available. These areas include the prevalence and treatment of sexually transmitted diseases, reproductive tract infections, maternal mortality and morbidity, women's nutritional status, and female circumcision.

A third area about which we know little is the obstacles women face in using contraception. Significant proportions of women in developing countries state that they do not want more children but are not using family planning. We are unable with currently available data to fully understand the reasons. Inadequate access to family planning services is one element of the explanation, but it has become clear that the impediments may be multiple and complex, and include incomplete knowledge, concerns about side effects, and objections from partners. If we knew more about the reasons for the obstacles women face, services could be better designed to address these underlying factors with the result that women could more fully achieve their reproductive goals. Furthermore, with the reduction of unwanted pregnancy, fertility rates would come down. At the same time that information on individual

women is deficient in some areas, information on women's social environment is also lacking.

It is increasingly apparent that the many ways in which women's lives are linked with those around them is not well understood, although there is a relatively new body of research that provides some important clues. We now know enough to say that the household cannot always be assumed to be a cohesive economic unit, the household resources are not necessarily equally shared, and that reproduction and parenthood are as likely to link men and women who do not live in the same household as men and women who do. This recognition leads us to the view that a continuing commitment to women's concerns requires an approach to data collection in which women are linked directly to their sexual partners, their parenting partners, and their children, rather than assuming that all these relationships are contained within the household.

Women do not have children alone, but we know relatively little about their partners and practically nothing about how they and their partners make decisions about sex and the avoidance of disease transmission, family planning, the management of unwanted pregnancy, and family size. To the extent that information on men's reproductive behavior is available, it suggests that in some settings men's experience may be quite different from women's experience.

For example, reports of contraceptive use are often higher among men than women, particularly with respect to the use of condoms. Men's sexual experience often starts earlier than women's, and in some countries significant proportions of men have more than one wife or regular sexual partners.

If we knew more about women's partners, we would be able to design effective ways of including men in programs about sexuality, fertility, contraception, and disease prevention. We would be able to design an appropriate mix of family planning and other reproduction health services, and we would be able to identify the critical questions that women must be asked about their sexual relationships when they visit service facilities so that the services they receive are the most appropriate and realistic in light of their circumstances.

New data are also needed to learn more about how the costs of children are shared among parents. The costs of children are rising in developing countries, both because parents are making greater investments in their children, and because governments are privatizing many of these costs as part of structural adjustment programs. We need to know how changes in the cost of children affect the traditional division of parental and other family responsibilities, and as a consequence how these changes may affect the fertility desires and reproductive behavior of men and women.

Finally, women's well-being is not only a function of their own resources, but also of those who depend on them. Clearly, our concern for women's lives, economic development and population, leads us to a concern for how children are faring.

Families largely control children's access to both private and public resources and distribution of these resources is not always gender neutral. This requires that we give increased attention to the girl child and how she is faring relative to her brothers. The

transitional years between childhood and adulthood are particularly critical for women as it is then that crucial choices are made and pathways taken.

In summary, due in large part to data collection efforts supported by the U.S. Government, particularly USAID, much is known about the lives of women. There remains of course much that is not known. Women are not the only agents of population change. They live in families, households, and communities. In order to formulate policies and programs that are based on the idea that it is fundamentally important to meet women's needs, it is crucial that we try to understand women's lives in all their complexity. Thank you.

Mr. SAWYER. Thank you very much.

[The prepared statement of Ms. Blanc follows:]

PREPARED STATEMENT OF ANN K. BLANC, COORDINATOR FOR DEMOGRAPHIC ANALYSIS, MACRO INTERNATIONAL

We are pleased to have the opportunity to give our views on future needs for data on women to this Subcommittee. As research partners over the last 10 years who have not only designed data instruments for the measurement of women's status but who have also researched the linkages between women's roles and status and population change, we have gained a growing appreciation for the complexity of women's lives and the myriad ways in which their economic condition and scope for independent action is tied up with their family relationships and obligations. Recently, our two organizations, Macro International, Inc. and the Population Council, have been collaborating to improve data collection on women's lives in ways that will be both efficient in terms of resources and meaningful from a policy point of view.

Our statement will first review the current state of our knowledge about women's lives and the primary sources of data from which this knowledge derives. We then recommend some strategic ways to adapt our existing data collection systems to allow a deepening of our understanding of women's lives and needs through more attention to their reproductive health and their scope for reproductive choice as well as to promote a wider circle of vision of women in the context of their relationships with their sexual partners, parenting partners, and with their children.

## WOMEN'S LIVES, ECONOMIC DEVELOPMENT AND POPULATION CHANGE

### A. What Do We Know About Women's Lives?

#### *Demographic Data*

For numerous countries and for several points in time we know in some detail about various aspects of the lives of women and girls that have an effect on population change. These data are derived primarily from survey programs, such as the Demographic and Health Surveys Program supported by USAID. For example, we know:

- how many children women have (women in Brazil have about 3 children, women in Uganda, about 7);
- how many children women want (around 4 in Kenya, 2 in Thailand);
- how many women have experienced the death of a child (40 percent in Tanzania, but only 13 percent in Colombia);
- how many women are using contraception (about 53 percent of married women in Mexico, about 6 percent in Nigeria);
- when women marry (around age 22 in Sri Lanka, around age 16 in Senegal).

Internationally comparable data are also available on some aspects of the health of girls and women. In recent years, there has been a particular focus in the DHS project and elsewhere on efforts to collect information on women's reproductive health. For example, we know:

- how many women have medical assistance during delivery of a child (90 percent in the Dominican Republic, 19 percent in Pakistan);
- how many women get prenatal care during pregnancy (92 percent in Botswana, 58 percent in Tunisia);
- how many girls die before reaching age five (1 in 10 in Indonesia, 1 in 5 in Senegal).

Limited descriptive data on selected other elements of women's health, such as maternal mortality and morbidity, have recently become available for some countries.

#### *Social and Economic Data*

Data on women's education and labor force participation are also available by country and over time from surveys and censuses. Much of this information is compiled by the United Nations and other international agencies. Differences between men and women in their roles and responsibilities have made certain aspects of women's lives — in particular their economic activities — difficult to record and measure accurately. Nevertheless, we are able to document the main features of women's participation in social and economic development, such as:

- how many women age 25 and over are illiterate (20 percent in Panama, 98 percent in Burkina Faso)
- how many age girls age 6-15 are currently enrolled in school (84 percent in the Philippines, 40 percent in Morocco)
- how many women age 15 and over are economically active (78 percent in Burundi, 8 percent in Algeria)
- how many women age 15-49 are working for cash (34 percent in Zimbabwe, 13 percent in Egypt)

In addition, there are some data sources that go beyond these standard statistics to provide data on women's time use, their earnings, and their patterns of migration.

*The Relationship Between Women's Social and Economic Condition and Demographic Behavior*

Household survey data which describe the demographic, economic and social situation of all household members allow an exploration of the linkages between women's status — in particular women's education and their labor force participation - and their demographic behavior. Recent research reviews summarizing the large number of studies on this topic have found that women's education — in particular as it enhances women's autonomy — is negatively related to their fertility and to child mortality and positively related to life expectancy and, importantly, that that relationship is enhanced when there is greater equality between the sexes in schooling. Other studies have documented the diversity of relationships between the type of work women do and their fertility, with participation in the modern sector of the labor force more likely to be negatively related to fertility in countries that have reached a moderate to high level of development.

**B. How Have We Learned About Women's Lives?**

Much of what we know about women's lives as they relate to population and socio-economic development is derived from sample survey data. A large number of surveys have been conducted in both the developed and developing world. In the developing world, these are usually nationally representative surveys which entail person-to-person interviews conducted in households. These surveys are usually carried out by governmental agencies of the countries in which they are conducted, often with technical assistance and funding provided by outside donors, such as USAID, the United Nations, or the World Bank.

When the primary objective is the enumeration of demographic events, such as births and child deaths, the individual woman is usually the survey respondent and the unit of analysis. That is, women are the people from whom the information is collected and about whom the information is reported. This occurs both because women are thought to be the most reliable sources of information on these events and because most measures of fertility as well as its determinants, such as the use of contraception and age at marriage, are based on women. In other words, the estimation of demographic rates, such as fertility rates and infant mortality rates, doesn't require information from men.

When the primary objective of data collection is to provide broader social and economic data, the survey respondent is usually the head of the household and the unit of analysis is the household head or individual household members. In other words, some of the data collected in household surveys apply collectively to the household as a whole and some of the data apply to each individual separately. When households are described by their overall levels of income or consumption, by their amenities, or by the characteristics of the household head, the underlying assumption is that the household is a cohesive social and economic unit within which resources are shared. In the absence of data on families, households are often assumed to represent families with the adults in the household assumed to have parenting responsibilities for the children resident in the household. We find this

approach problematic because the welfare of the head of the household is used as a proxy for the welfare of all of the household members.

## DATA NEEDS FOR THE FUTURE

Research has led us to become increasingly aware of two significant issues:

1. There continue to be many aspects of the lives of individual women about which we have inadequate information.
2. There are myriad ways that women's situation is tied up with their family responsibilities and living arrangements.

### **A. Deepening Our Understanding of the Individual Experiences of Women and Girls**

A significant theme of the ICPD conference will be that family planning and health programs need to be designed to take account of a broad range of women's needs. This implies that we need to understand women's experiences more fully. We have identified three crucial areas in which we believe that data on the lives of individual women are seriously lacking: the management of unwanted pregnancy (including abortion), other aspects of reproductive health, and the obstacles to contraceptive use for women who want to stop childbearing or delay their next birth (sometimes called unmet need).

Internationally comparable data of good quality on how women manage unwanted pregnancy, including the prevalence of abortion, are not available. If we knew more about the prevalence of abortion and the women who use it, we would not only understand fertility change better but we would also know more about the populations that are not adequately served by current family planning programs and would be able to redirect resources to meet these women's needs better.

Within the area of women's reproductive health, simple documentation of the prevalence of many conditions is not universally available. These areas include: the prevalence and treatment of sexually transmitted diseases, reproductive tract infections, maternal mortality and morbidity, women's nutritional status, and female circumcision. If we knew more about women's experience with these conditions, we would know more about how to serve women's needs both in terms of family planning and health services. For example, a recent study in rural Egypt found that many users of IUDs and pills had health conditions (such as high blood pressure and reproductive tract infections) that are contraindicated by the method that they were provided. As a result, their family planning needs are being met without adequate attention to risks to their health.

Another area about which we know little is the obstacles women face in using contraception. Significant proportions of women in some developing countries state that they do not want

more children but are not using family planning. We are unable, with currently available data, to fully understand the reasons. Inadequate access to family planning services is one element of the explanation, but it has become clear that the impediments may be multiple and complex, including incomplete knowledge, concerns about side effects, and objections from partners. If we knew more about the reasons for the obstacles women face, services could be better designed to address these underlying factors with the result that women could more fully achieve their reproductive goals. Furthermore, with the reduction of unwanted pregnancy, fertility rates would come down.

Improved information on these topics can be achieved by several means, including increased attention to such issues in standard surveys, such as the DHS surveys, investments in the development of innovative methodology, and the application of promising qualitative approaches.

#### **B. Widening Our View of Women's Social Environment**

It is increasingly apparent that the many ways in which women's lives are linked with those around them is not well understood, although there is a relatively new body of research that provides important clues. We now know enough to say that the household cannot always be assumed to be a cohesive economic unit, that household resources are not necessarily equally shared and that reproduction and parenthood are as likely to link men and women who live together within households as men and women who do not. This recognition leads us to the view that our continuing commitment to women's concerns requires a more relational approach to data collection in which women are linked to their sexual partners, their parenting partners and their children directly rather than assuming that all these relationships are contained within the household.

The emergence of female headed households and their increasing prevalence in many countries is part of a broader process of socioeconomic development in which women are taking up more and more economic responsibility for families. But at the same time because of migration, marital disruption and multiple families, the household provides an imperfect framework within which to study sexual or parenting partnerships. Furthermore, there is evidence from a small number of studies which suggests that income is not always fully shared within households and that men and women use their income differently, with women sharing a larger fraction of income under their control with their dependents than men.

While various development interventions for women have improved their access to credit and increased their income earning capacities, this has often come at a price for women in terms of longer work hours and greater economic responsibilities within the family despite an unchanging domestic burden. Finally, it is increasingly recognized that resources are not always equally shared among siblings, with girls often the first to be discriminated against in terms of nutrition, health care and education.

*Women and Their Sexual Partners*

Women do not have children alone, but we know relatively little about their partners and practically nothing about how they and their partners make decisions about sex, family planning, the management of unwanted pregnancy, and family size. In addition, behavior that affects the transmission of AIDS and other STDs, like the use of condoms and multiple sexual relationships, is clearly the result of both the separate and joint decisions of sexual partners. Yet it is an area about which we understand very little. To the extent that information on men's reproductive behavior is available, it suggests that in some settings men's experience may be quite different from women's experience:

- Reports of contraceptive use are often higher among men than women, particularly with respect to use of condoms. (In Tanzania, 4 percent of married men say that they are using condoms compared to less than 1 percent of married women.)
- Men's sexual experience often starts earlier than women's. (In Jamaica, 78 percent of men age 15-19 report premarital sexual experience compared to 55 percent of women.)

Little information is available about the processes by which reproductive decisions are made or even whether they can properly be called "decisions". For example, while we may know that women state a particular preference with regard to having children, we do not know whether this preference is the outcome of a negotiation with her partner, whether her preference has changed over time, what factors have influenced her preference, whose preference will carry greater weight in the outcome, to what extent other people outside of the couple influence the negotiation or its outcome. Even less is known about the ways in which gender inequality affects the ability of women to negotiate sexual and reproductive matters in their own favor. We need to know more about the extent of involuntary sex, including the prevalence of rape, sexual abuse of minors and domestic violence. If we knew these things, we would be able to:

- design effective ways of including men in programs about sexuality, fertility, contraception, and disease prevention;
- design an appropriate mix of family planning and other reproductive health services, such as STD prevention and treatment services;
- identify the critical questions that women must be asked about their sexual relationships when they visit service centers so that the services and/or treatment they receive are the most appropriate and realistic in light of their circumstances.

In order to collect survey data on these issues it would be necessary to expand the universe of people who are interviewed beyond individual women to include their partners. This is a feasible extension, and in fact, some limited work on this had been done.

*Women and Their Parenting Partners*

Women acting on behalf of the family are seen as agents of change in all aspects of population and development policy, health care for children, and the acquisition of independent economic livelihoods. But, women cannot be expected to bring about the demographic transition on their own, particularly within the context of existing family structures and gender relations in many of today's high-fertility countries. Women are carrying rising economic responsibilities for their families while continuing to carry heavy domestic burdens.

New data are needed to learn more about how the costs of children are shared among parents. The costs of children are rising both because parents are making greater investments in their children and because governments are privatizing many of these costs as part of structural adjustment programs. We need to know how changes in the cost of children affect the traditional division of parental and other family responsibilities and, as a consequence, how these changes may affect the fertility desires and reproductive behavior of men and women. Available data show that:

- In some countries, particularly where polygyny is common, men have more children than women do. (In Ghana, men age 55 and older report an average of more than 8 children, while women have around 6 children.)
- During the course of their lives, many men and women marry and have children with more than one partner. (In Cameroon, 26 of ever married women of reproductive age have been married more than once compared to only 2 percent in Sri Lanka.)

If we knew more about women's parenting partners, we could:

- be more effective in recommending appropriate reforms in family law and legal practice, including fair child maintenance, inheritance laws, and child affiliation laws;
- be better able to design family leave and child care policies;
- have a more accurate picture of the economic burden that women (and their partners) carry.

To learn more about how these burdens are currently shared, it would be necessary to use household surveys as a means of identifying women's parenting partners, whether they be in or outside the household and whether they be the same for all their children or not. Questions could be asked of women about the contribution of each co-parent to each child both in terms of financial and physical care.

*Investments in the Next Generation*

For years, we have focused on women alone, however women's well-being is not only a function of their own resources, but also of those who depend on them. Clearly, our concern for women's lives, economic development, and population leads to a concern for how children are faring. The human potential for future economic and social progress rests with today's generation of children. At the same time, continuing population growth is resulting in a rapid rise in the proportion of the population that is under the age of 15.

Families largely control children's access to both private and public resources and the distribution of these resources is not always gender-neutral. The established link between high fertility, sibling inequality and gender role differentiation requires that we give increased attention to the girl child and how she is faring relative to her brothers. The transitional years between childhood and adulthood are particularly critical for women as it is then that crucial choices are made and pathways taken. We need to have more information about the parents and other family members of girls and the ways in which they influence these choices. We also need to know more about the institutions beyond the family that may provide her with services and support. If we knew these things, we would be better able to:

- achieve universal schooling for girls by taking into account family constraints and the concerns of certain cultures for the sexual safety of girls and young women;
- design programs that provide direct health and nutrition services for vulnerable children;
- address the special service needs of adolescents;
- enforce children's rights to the financial support of both parents.

To learn more about the social supports for children, it would be necessary to use household surveys as a means of identifying a sample of children for whom information could be collected from a parent or the child herself, if she is old enough, about all the adults that share responsibility for the physical care, financial support and socialization of that child. Again, some efforts have been made in this direction although there is a great deal more that could be done.

In summary, due in large part to data collection efforts supported by the U.S. Government, especially USAID, much is known about the lives of women. There remains, of course, much that is not known. Women are not the only agents of population change. They live in families, households and communities. In order to formulate policies and programs that are based on the idea that it is fundamentally important to meet women's needs, it is crucial that we try to understand women's lives in all their complexity.

Mr. SAWYER. Let me go directly back to you, Dr. Blanc. The question that recurs in virtually each of the arenas that you raise is, it occurs to me, whether or not there are consistent protocols for gathering the kind of data that you discuss as being lacking. Is that kind of consistency across international environments available? Who should be in charge of establishing that consistency?

Ms. BLANC. Well, some of what I am talking about is really—there are not standard ways for gathering the information at the moment. For example, take the example of abortion. There are people who would argue that it is impossible to collect good data on abortion. I think that that is not necessarily the case. We are simply—we have simply gotten behind in our ability to do that. Under previous administrations in Washington, we weren't allowed to do research on abortion, so it has gotten a little bit behind other areas.

We are trying various ways of collecting data. There are techniques, for example, that are used to collect information on other kinds of behavior that people don't want to talk about, like illegal drug use. So the sorts of things that I am suggesting are more in the earlier stages of development, of standardized data collection. But I think it is to the point now where we need to go beyond. The information that we collect on a regular basis continues to be important, but that we need to go beyond what we already have.

Mr. SAWYER. Could you expand a little bit more about the kinds of implications that you distinguish when you talk about the consequence of assumptions about head of a household with certain kinds of questions and the member of the household that makes primary reproductive and other kinds of more personal decisions? It seems to me that we may have some of those very same kinds of assumptions operating within our own statistical systems in this country.

Ms. BLANC. Well, it has traditionally been the case that when you want to ask and get information about a household, in the end you have to go up and knock on someone's door to ask them the questions. So you go to households. And it has traditionally been the case that the so-called head of the household has been asked the questions. There is a great deal of debate about what—how to define a head of household, and actually one of the inconsistencies in statistical information is the way in which heads of household are defined. But the assumption has always been that the head of the household reports about what the income of the household is, the consumption of the household, the activities of its various members, and that that household functions as a cohesive social and economic unit.

Well, we know certainly that within the United States there are—that is not always necessarily the case. There are families living in households in which each parent has obligations perhaps to children who live in different households. There are recon—whatever you want to call them, reconstituted families, blended families, those things occur in other—in developing countries as well. And so you can't make—I think it is inappropriate to make the assumption that if a head of a household tells you that the resources of the household are at a certain level, that that applies equally to all members of the household. And that all members of the house-

hold are sharing equally in the resources, that they all have the same access to the resources. And I think it is important for us to try and look a little bit more closely at how decisions within the households are made, do women have access to these resources that head of household is reporting?

Mr. SAWYER. Thank you.

Dr. Rutstein, you mentioned five areas in which data need to be collected on population growth.

Mr. RUTSTEIN. Only five?

Mr. SAWYER. If I could distinguish, where among those do we need to concentrate our greatest efforts, and where are the data most lacking? It is not the same question.

Mr. RUTSTEIN. We have had a—

Mr. SAWYER. Which areas will have the greatest consequence?

Mr. RUTSTEIN. OK. We have had a lot of success in measuring fertility rates themselves and in measuring contraceptive use, marriage. We have had some problem with dealing with marriage because of differing definitions. We in the DHS and the prior programs like the World Fertility Survey, we don't consider marriage just the legal and formal marriage, but also any long-term relationship between two partners to be a consensual union. This information is somewhat problematic in its definition. When you start to go from a consensual into just a very casual kind of relationship, the differences between those is sometimes hard to define.

But I think the worst area in which we attempt to measure is that of abortions, as Ann has mentioned, we—for the previous administration, we could not even use the word on our questionnaire. I mean we weren't allowed to mention it to women. We did no research. We don't measure the quantity of abortion, we don't even attempt to right now.

There is a module within the new version of the DHS which is the phase III which we do ask some questions about abortion. However, we are not very confident we can actually estimate the number of abortions with that module, but rather to get information on the consequences in terms of was this an abortion that needed some health care afterward, who was the person perhaps who performed the abortion, whether it was just a nonmedical person or what. And those kinds of aspects are basically what we have been looking at now. But in terms of the numbers which are the basic demographic determinant, we are still far from being able to estimate adequately the consequences.

Mr. SAWYER. You mentioned the World Fertility Survey and its subsequent successors, all the way to the work that is done by Macro International today. Would you describe these as, in terms of sample surveys, among the statistical tools that we have to use, would you describe these as model systems or merely the best that is available? What further is needed?

Mr. RUTSTEIN. Well, the—we are constantly trying to improve them. The World Fertility Survey, I used to work there, and the World Fertility Survey came about basically when some examples I think from Latin America were set up. There were some surveys done in Latin America which used birth histories to gather information on the fertility of women, and asked some other questions.

The World Fertility Survey, then, was instituted to be able to get that information on a comparable basis throughout the world.

One of the problems of a lot of the ad hoc surveys is being able to compare one measure with another because there are different definitions. So the World Fertility Survey was set up to do that. But basically only in the fields of fertility and family planning.

It has now been expanded in terms of its scope of looking at—in the first part, it was found that the data in the birth history, which was basically looking at fertility levels, were very good in producing infant and child mortality levels, which had been the subject of a lot of guesses and indirect estimation techniques prior to that. And now it has progressed and in a sense that the demographic health surveys added a large component; which is about half the survey now, to gather information on the health of children and of their mothers.

We collect information on the anthropometrics of young children and their mothers, the height and their weight, in order to gauge their nutritional status. So a lot of information has been perfected over the years, future areas, I think, that we do have some modules which we use principally as testing grounds.

We have added a reproductive calendar for the last 5 years to know not only about use of contraception and pregnancies that do not result in a birth, but also information, gather information on woman's occupation, her marital status during that period, and her migration to be able to tie this information together in terms of the analysis.

Mr. SAWYER. Let me ask you further, then, and although your testimony suggested it, this is a fundamental question that I would like to ask the other members of the panel. Do we need more areas of data or do we need more definition, a finer view of small area data? Do we need to refine what we are learning about the things that we are learning about now, or do we need to expand the areas that we are learning about?

Mr. RUTSTEIN. In essence, we need both.

Mr. SAWYER. That is exactly what my expert to my left said.

Mr. RUTSTEIN. We have problems, though, in dealing with very small areas with surveys. Because if you do a—

Mr. SAWYER. We understand. We have dealt with those issues in our own measurements as well.

Mr. RUTSTEIN. Well, one of the problems, if you do a survey, if you think about it, a survey is really a census that is done, many more questions than the usual census, on a few people. So if you expand it—

Mr. SAWYER. It comes down to this, we are dealing with the question in our own data of whether or not the decennial census needs to be the vehicle that carries the inquiry for the whole range of data that the country needs, or whether some of that might be better displaced into other vehicles so that we can gather finer, better refined data, about the most critical areas of information. It is a fundamental tension in any kind of measurement system.

I am asking you in the broadest possible terms, where does that tension come down in international measurements of the kinds of things that we are talking about here today? Does it come down on not gathering data in enough areas or do we need better data

in the areas where we are gathering it? Or is that just not a fair question? Answering the latter is perfectly legitimate.

Mr. RUTSTEIN. Yes, I think—well, it is a fair question. The problem is that we do have expanding areas of interest. And those areas need to be covered. For example, domestic violence may be one area. We need that information at differing levels of national levels, where there are some national or not. Some information we won't be able to estimate at a very small area. For example, infant and child mortality rates from a survey require large numbers of cases. And to do that at a subnational area, then, would require a survey that is beyond the capability of most countries to conduct.

Mr. SAWYER. Others?

Ms. BLANC. I just want to say that it is also worth stating that it is quite—in fact, it is practically impossible to do a survey unless you have a census, because you need the census from which to draw your sample.

Mr. SAWYER. We absolutely agree. We agree without equivocation.

Mr. KEELY. On international migration, Mr. Chairman, at national levels we need better data, not more data. For international comparability, we need better data, probably not more data, but that is down the road. And refugees, we need to collect some data.

Mr. SAWYER. Anything would help.

Mr. KEELY. It is not collected. They do not want collection of data in an emergency in a place like Goma. People like me are in the way. We are not to be there, period, end of discussion. If you want that to change, you or some other donors will have to mandate that data be collected. And that will have to be done with a stick, not a carrot.

Mr. SAWYER. I have taken too much time. Let me turn to you.

Mr. PETRI. I guess I just have one. Could you—I should know this. What is my—who is Macro International?

Mr. RUTSTEIN. Macro.

Mr. PETRI. Macro International, what is it?

Mr. RUTSTEIN. It is a private firm who has a contract with the U.S. Government to conduct surveys, provide technical assistance to countries to conduct these surveys.

Mr. PETRI. So is it nonprofit?

Mr. RUTSTEIN. No, it is for profit.

Mr. PETRI. And you get contracts from different Federal agencies or—

Mr. RUTSTEIN. Yes. It has very—various different arms. We—our group has a contract with the USAID. But there are other parts of Macro that have contracts with public health system, with the State of Maryland.

Mr. PETRI. Who owns it, then?

Mr. RUTSTEIN. The officers of Macro actually own it, together with ourselves, because it is an ESOP.

Mr. PETRI. Ah, OK.

Mr. RUTSTEIN. I would like to say that sometimes—

Mr. SAWYER. It is a perfect organization.

Mr. RUTSTEIN [continuing]. A for-profit firm may be more cost effective than a nonprofit.

Mr. PETRI. I guess, Dr. Blanc, I just had a kind of a—you may have been asked to address this so you did the best you could, but why—is there a reason for focusing on data needs on women as opposed to people? I mean, do we have better data on men than we do on women or what is the—is there some gap there that needs to be closed or what is the reason for focusing on women rather than people, which would include children and old people and everyone else?

Ms. BLANC. Well, I am glad you asked the question, because that is actually the very point that I was trying to make, in a way. I would say in the dem—certainly in the demographic arena, we have far better data on women than we have on men, and that is mainly because women are seen as the agents of demographic, population change and as well as the most reliable respondents about certain kinds of information, like childbirth.

But I think that there is—in the last few years, there has really been a lot of interest in beginning to collect some of these data on reproductive behavior, demographic behavior among men. In fact, in the Demographic and Health Surveys Program, we have done about 15 surveys of men in conjunction with the surveys of women that we have done. Certainly in other arenas, like migration, social and economic data, men are usually the subject of—or at least the respondents in the surveys. But because women are the ones who have children and women are the ones who mostly use family planning and they are the ones at whom family planning programs are normally aimed, they are the ones on which we tend to collect the data. Especially if you want to evaluate a family planning, the effectiveness of a family planning program.

Mr. KEELY. Congressman, could I make a small statement? In terms of your question, there is an importance in the area of refugees among international migrants. About 80 percent of refugees are women and children. Many refugee camps are dominantly, predominantly women and children. In many, particularly of the refugee situations that have lasted for years and years, the men are absent, either because they have tried to probe about returning or because they are warrior refugees, a la the Afghani situation. So in international migration refugee situations, there are some very particular issues that if you are going to serve refugees, if I may put it this way, you are to a large extent going to serve women's needs and their children's needs. Not exclusively, but to a very large extent.

Mr. PETRI. I guess that leads to the—I was going to ask you to, Dr. Keely, to expand on your statement that we need some sort of a stick to improve data by asking what sort of things you think we could learn that would be important. I, myself, suspect one thing we might learn is that—is whether these are really refugees or migrants that are attracted by the food and the tents, because sometimes I think if the supply produces the demand and we may be enlarging the served population because of ready availability without really dealing with a crisis for all the people who participate in the service unit, so to speak. But I am just curious, what sort of things you think.

Mr. KEELY. Well, if we focus just on huge crises, for example what is going on now in Rwanda or Somalia and so forth, what we

do not know in terms of refugee demography, if I can put it this way, it is a hard way to put it, what is a reasonable expectation about death in a crisis movement? And what is a reasonable expectation about deaths from malnutrition under those? In situations, what proportion of children or of anybody are malnourished because it took so long for a crisis to develop so that when they finally do move, they are pretty malnourished, as opposed to other situations where because of, let's say, violence in war, people move very quickly but are fairly healthy. How do we do a quick assessment of that sort of thing in order to do the logistics about food, what is needed in food, what is needed for a healthy diet, what is needed in terms of medicines, and so forth given the conditions on the ground?

We have some very good capacity at the Centers for Disease Control and Prevention for doing quick assessment on medical issues. But we really do not have a good deal of information about things like death rates, fertility within camps, morbidity and mortality, until after crises are over.

And some crises we never know what happened. For example, it is a morbid issue—there is a literature trying to estimate the death rates in Cambodia during Pol Pot's regime. It is not the kind of thing one wants to know all the time, but it is a useful, in an intelligence, in the broad sense of that term, kind of way to know about what can be expected under certain circumstances. We are woefully inadequate, woefully inadequate.

And you said the stick aspect. Quite frankly, in an emergency situation, what you want is the fewest number of people with the greatest amount of capacity to meet the emergency. And therefore researchers are looked upon as excess baggage. And therefore, we are not there, nor are we going to get the experience to build up the capacity to do quick assessments very well under very difficult circumstances. It has not been done, we do not have the experience, and I am not sure that we are ever going to get the experience, until some donor says, by golly, we need that experience, we want them to have the capacity to do it. So you say to UNHCR, or whatever, if you do not introduce the ability for these folks to develop this capacity to do it and do it well, you are not going to get x amount of dollars.

Now is it that important? I don't have to make that decision. I have really not thought it through. But I do know that if you ask me is the death rate in Goma reasonable, given the circumstances—it is not reasonable in a certain basic human sense—but under the circumstances is it reasonable or could it be less than it has been? I can't answer that. Is the—are death rates from malnutrition in Somalia versus Mozambique versus Afghanistan, are they comparable and are they acceptable? I don't know. Do you want to know? If you want to know, then you have to or somebody has to say that the demographic community ought to have the capacity to find that sort of thing out.

Mr. PETRI. Yes, I would like to know. It seems to me that if the military could have military historians, film crews, everything else in battle trying to make a record of what happened so they can analyze it later to do a better job, that since this refugee phenomenon is a growing one and looks to be around for some time, we

ought to learn a lot more about it so that we can do a better job at meeting people's needs. Or avoiding having to meet people's needs or discriminating between different types of needs that they have rather than floundering around on a kind of ad hoc basis each time it develops.

Mr. KEELY. Think of that, Mr. Congressman. What you are saying is such a luxury, because if one looks at the attempt to deal with personnel and career issues of people who deal with emergencies, of UNHCR and other nongovernmental groups that do this, the possibility for building a career, for having people with field experience, is so horrible, and it has been talked time and time again among the NGOs as well as the international organizations, that the kind of things you are talking about, that kind of personnel planning and ability and career ladders and recruitment and maintenance and retention, I mean that is so far a luxury, so far out on a luxury scale, compared to just the folks who know sanitation, latrines, logistics, food buying on the international market, et cetera, et cetera, those folks don't have a secure career status within the emergency relief field.

Mr. SAWYER. Let me just offer an observation. I think the point you raise is enormously important. With a phenomenon that may be growing as rapidly as this particular phenomenon has grown in our lifetimes, it is very difficult for us to distinguish between what is a product of instability and what is a further cause of instability. It is, I suspect, both and in some cases simultaneously both.

The other day we debated on the floor of the House the role of private nonprofit agencies in determining the eligibility for aid in the midst of an emergency. And the truth of the matter is we probably don't have enough to make those kinds of determinations as governments, within our own country, much less ask others to do it for us. I think the question you raise is extremely important. I didn't mean to interrupt.

Mr. PETRI. It wasn't my question, it was Dr. Keely's topic, but it is an important topic. And I guess I don't want to explore it more to use up more time, except to say that I appreciate your testimony and I hope that we can build on it and think of some ways to try to do more, have a more structured approach. At least to what we are actually doing out in the world. In addition to all those other things, this might be nice in terms of collecting more data about different countries.

And one other observation I wanted to make and that was to say how right I think you are, having lived several years in Somalia, about our misperceiving the world in terms of that globe with all these places painted on, and we think they are countries and a definition of a country is what we think is a country, when many of these places are Potemkin villages, and the local people look at it in quite different terms and the territory is wildly different than the way it looks on our map, in their minds. And if we have to figure out ways of relating to their reality if we are going to deal in their world and influence events in it. Thank you.

Mr. SAWYER. Thank you all for your contributions here this morning.

If there is no further business, we stand adjourned.

[Whereupon, at 12:16 p.m., the subcommittee was adjourned.]

[Additional material submitted for the record follows:]

## PREPARED STATEMENT OF LOUISE CHUBB, RETIRED ARMY CIVILIAN

Witnesses at your excellent hearing August 2 expressed dedicated and professional views on the problems of collecting demographic statistics, excessive population growth, sustainable economic growth, and relations between nations. With your permission, I would like to place these problems in an even wider context.

It is generally agreed that since the end of the Cold War we face a number of new problems.

Most directly addressed August 2 was the subject of serious overcrowding of the planet. If it is not already true, it is close upon us that the number of people now alive are consuming food faster than the planet can replace it with new growth.

Mention was also made of the pollution problems brought about in part by the very industrial processes of which we were so proud a few short decades ago. The pollution from gasoline exhausts, household waste, and industry, if unchecked, may poison our environment beyond man's ability to survive.

These problems, although they vary somewhat from place to place, are basically <sup>A</sup>world-wide, and require world cooperation for their solution. Yet we see the proliferation of "minor" conflicts which may not in themselves threaten nuclear destruction, but which mightily interfere with constructive international engagement. International criminal activity is up, and its most malign form may be the smuggling of plutonium. This in turn could possibly result in new terrorist

power brokers further damaging the world's social fabric. Our military and security organizations have their work cut out for them in foiling plutonium smuggling and terrorist attacks.

There follow a few ideas for approaches to some of these problems.

At the conference in Cairo, we face a deficit in American prestige compared to former years. When I was overseas in Africa 1961-63 with the Agency for International Development, the United States was the most respected industrial country because we had never made an African country into a colony. Now we read of "anti-American" sentiment among crowds in Mogadishu and elsewhere. How can this be? We know it is wrong. It is partially that we <sup>more</sup> must show/respect for other countries and for their ways of life. The attached note which I widely transmitted last year, along with the Sierra magazine March/April article entitled, "Big Drop," describes a growing and widespread drop in male sperm count. The drop is just about certainly based on pollution. By implication, the article accepts that industrial countries and processes bear an important share of responsibility for pollution problems. If we included suitable reference to this finding in our presentation in Cairo, I believe it might improve our "bona fides" as participants.

Another point is that most people in Third World countries would like to have a standard of living like or near ours. We have no business to try to hold them back. One way to make them feel that their aspirations may be possible, would be if Detroit

would come out with an electric car that could run for eight hours without recharging, go 60-plus miles per hour, and cost no more than a Ford Fiesta or Chevy Camaro. Of Course, the Cairo conference will be upon us before this can be accomplished, but if President Clinton, after consulting with Detroit, could announce a U.S. goal of producing such a car as an urgent U.S. goal, as President Kennedy announced the goal of putting a man on the moon, surely it would lift men's spirits around the world, reduce the pollution problems, and show the right kind of U.S. leadership.

The problem of nuclear power is difficult. There is, at least, pretty wide agreement outside of the manufacturers of nuclear generating equipment, that nuclear power has serious dangers, not only from accidents like those at Chernobyl and Three Mile Island, but also because many of the processes produce plutonium as a by-product. To keep the criminal aspects of this within reach of the agencies of law and order, we should stop exporting nuclear power plants and go instead to gas turbine technology as a more benign link between fossil fuels and environmentally benign power whether from fusion or other sources.

*Over-*

Yes, population is an engine that pushes all our other problems and makes them harder to solve. However, we will get further explaining this reinforcing effect and getting agreement on measures to combat it if we display more decent respect for all the problems of the citizens of our endangered planet.

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Encl.: "Big Drop" transmittal

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May/June 1993

Dear Friend:

Have you seen the enclosed article, "Big Drop," from the March/April issue of Sierra magazine? It says that male fertility has declined 40% in the last 50 years.

I happen to be a supporter of the idea that we should declare a national and world goal to stabilize world population. I think our numbers - and our careless use of chemicals - are overwhelming the environment that we live in, and that we did not create. From a symbolic point of view, you could say we are in danger of killing our Mother, Nature.

But the loss of male fertility is NOT the way to correct this. It is a serious medical problem that could even lead to extinction. I expect - and the article says - that it is a result of some of the pollution that we have been causing.

To cure this problem will take more than any efforts by me. But we could start by getting our Government to declare it a medical problem.

If you agree, please write to the Surgeon General:

Dr. Antonia Novello  
The Surgeon General  
The National Institutes of Health  
200 Independence Avenue, S. W.  
Washington, D. C. 20201.

Your grandchildren will thank you.

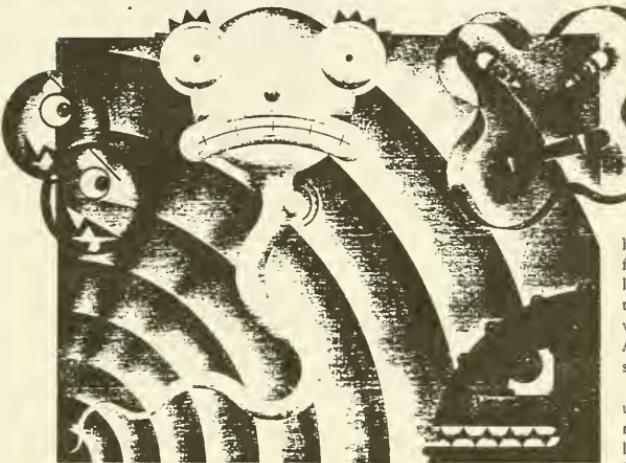
Sincerely,

*Louise Chubb*  
(Miss) Louise Chubb

Enclosure

## AFIELD

## BODY POLITICS



DUSTY PERIN

## Big Drop

MICHAEL CASTLEMAN

The phrase "population explosion" conjures up frightening images of a planet overwhelmed by a mass of humanity it can no longer support. But recent research confirms that we have another population problem as well, one that might be termed the "population implosion"—a steady, 50-year decline in the number of sperm.

The case of the dwindling sperm first came to light about 15 years ago when researchers compared then-current sperm-count findings with similar studies from the 1930s. They discovered that among healthy adult males who were not being treated for infertility, the average sperm count had declined by about 40 percent, from 120 million sperm cells per milliliter of semen to about 70 million.

The researchers speculated that sperm were not really on the wane.

but that the lower numbers were a result of improved microscopic counting techniques, increased sexual activity (which leaves men with depleted reserves), or the increasing popularity of tight-fitting underwear (which hold heat-sensitive sperm unnaturally close to the body, killing some).

Then in 1979 a Florida State University professor analyzed student semen samples and discovered not only surprisingly low sperm counts, but alarmingly high levels of several toxic chemicals, including DDT and PCBs. He suggested that environmen-

Temperature? Cool.

Underwear? Loose.

So what's the problem?

tal pollutants might be causing the sperm decline.

That report triggered a flurry of sperm-count studies, which produced results all over the map. Some showed average sperm counts in the low 55 to 75 million range, but others showed counts well above 100 million. Only men occupationally exposed to high levels of toxic chemicals were found to have semen loaded with pollutants. Most scientists held to the view that changes in counting techniques were responsible for the reported dip. After a few headlines, the "sperm crisis" became yesterday's news.

But sperm-count research continued around the world—there have been more than 20 reports since 1984—and last September the British Medical Journal published an analysis of the 61 best studies from 1938 to 1990. The researchers, statisticians at the University of Copenhagen, took great pains to minimize the effects of any changes in counting techniques and sexual activity. They examined not only the averages presented in the 61 papers, but also the ranges of sperm counts obtained, a statistical technique that produces a more persuasive analysis. They found that average sperm counts have decreased 42 percent, from 113 million to 66 million sperm cells per milliliter. Their conclusion: "There has been a genuine decline [in sperm count] over the past 50 years."

The next question is, why the drop? Forget tight underwear: it doesn't raise intra-scrotal temperature enough to account for that much of a slide. Once heat, sexual activity, and counting techniques have been eliminated as causes of the decline, only one plausible culprit remains: environmental pollution. While the authors of the study are cautious about assigning blame, they do venture to suggest that "such remarkable changes in semen quality . . . over a relatively short period are more prob-

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THE MAGAZINE OF THE SIERRA CLUB

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Sperm: down for the count

Michael Castleman

MARCH/APRIL 1993 • VOL. 78/NO. 2

ably due to environmental rather than genetic factors."

Sperm cells are the most delicate in the male body; exposure to low levels of toxic chemicals, which might not harm harder cells, can kill them in large numbers. During the past decade there have been several studies that have documented sudden major drops in sperm counts (some to the point of sterility) in workers in the chemical and pesticide industries. Fertility resumed when toxic exposure was eliminated. As the general population has been exposed to increasing levels of pollution, the effects have been less dramatic, but the Copenhagen study suggests that even at low levels of exposure environmental pollutants may be hitting the general male population below the belt.

(The Copenhagen researchers also speculate that the decline in sperm may be associated with the increase in the rates of testicular cancer, which soared 35 percent between 1973 and 1988. Danish men, for example, have an incidence of testicular cancer five times higher than that of Finnish men—and a sperm count some 46 percent lower.)

Given that it takes only one sperm cell to fertilize an egg, is this really a crisis? All species have evolved certain redundancies in their reproductive systems to allow a margin of error; from this perspective, men produce more sperm than absolutely necessary. The current consensus is that 20 million sperm cells per milliliter of semen are adequate for normal reproduction—below that number, men are considered "subfertile." If the average sperm count has dropped from around 100 million down to 60 million, we're not in imminent danger of dying out as a species, but we're considerably closer than we were a mere 50 years ago. And while humanity does need to curb its instincts to be fruitful and multiply, there are probably better strategies than extinction. ■

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